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Miami's Expanding Horizons
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THE NATIONAL GEOGRAPHIC MAGAZINE

Miami's Expanding Horizons

By William H. Nicholas

IN WEATHERED slacks and sneakers the professor knelt on the deck of the cabin cruiser, working intently over a small object. He looked up, then extended a penknife in my direction. On the open blade rested a small quantity of a yellowish substance.

"Have some sea urchin caviar," he invited. With some misgivings I tasted the offering. It was rich and fatty. He was slightly disappointed at my lack of enthusiasm.

"Too bad it comes in such small amounts," he said. "It's delicious. But one sea urchin yields only about half a teaspoonful. Maybe you would find raw conch more to your taste."

He handed over a slice. To me it had the consistency of a piece of inner tube, with about the same degree of succulence.

"It's better," he said, "in a salad, with vinegar."

New Food Sources in the Sea

The professor, Dr. F. G. Walton Smith, Director of the Marine Laboratory of the University of Miami, turned to eight bronzed young men and a girl who surrounded us.

"There are lots of things in the sea, like urchin roe and conch, which are edible and nourishing," he told his small audience. "Most people simply don't know about them."

Many Floridians are acquainted with the edible qualities of conch, or "conk," serving it in salads, or marinated, or with steaks.

Each of the earnest youngsters carefully examined his own queer loot, retrieved a few moments before from the floor of Biscayne Bay. They scribbled hurriedly in their notebooks. The group was a marine biology class at the University of Miami, aboard the *Megalopa*, one of the Marine Laboratory boats, anchored off Ragged Key some 10 miles southeast of Miami (page 575).

Thousands of northern visitors were splashing in the surf or lolling on the sands of Miami Beach. Crowds thronged Lincoln Road, its fashionable shopping thoroughfare.

Barkers for sight-seeing and deep-sea fishing boats extolled the merits of their craft to crowds on Miami's Bayfront Park docks. Winter guests clad in flaming sports attire strolled up and down Flagler Street.

Sailboats darted in and out from private docks of Coconut Grove homes fringing the bay. Automobiles bearing license plates from half the States in the Union parked along Coral Gables' "Miracle Mile." Racing enthusiasts converged on Hialeah Park and its flamingo-dotted oval.* The Greater Miami area was living up to its reputation as a vast all-year playground.†

But the little marine biology class, poring over sea urchins, filefish, sponges, coral, and shamefaced crabs (so-called because they insist on hiding their faces with their claws), represented a different, and highly audible, note in the Miami symphony.

University Sparks Cultural Life

With half a million permanent residents, and more constantly coming, the Miami area is weaving an unmistakable culture pattern. Sparking this pronounced trend is the astonishing University of Miami.

I drove out toward the University from Coral Gables, passing through its tree-lined streets, and then by broad highways into open countryside. Suddenly I saw before me a streamlined mass of steel, concrete, glass, and

* See "Flame-Feathered Flamingos of Florida," by W. A. Watts, National Geographic Magazine, January, 1941.

† See "Florida—The Fountain of Youth," by John Oliver La Gorce, National Geographic Magazine, January, 1950.

fieldstone—a group of spectacular and distinctly modern-type buildings rising in open pineland and rubbing shoulders with several low wooden structures resembling army barracks.

I did not have to look at the sign to identify the scene as the new main campus of the University of Miami (page 581).

Born in the midst of the fabulous Florida land boom of the 20's, and almost wrecked in the collapse and general depression that followed, the University survived hurricanes, both physical and financial, to become one of the Southland's outstanding educational institutions.

The University was chartered in 1925 and opened its doors the next year. The skeleton of a huge building was erected on a 160-acre campus one mile south of Coral Gables' business center, and 966 citizens pledged nearly $9,000,000 to the fledgling seat of learning.

Then, on September 18, 1926, Miami's worst hurricane struck with devastating fury.*

The land boom collapsed. Nearly all of the pledges went unredeemed. Title to all but 40 acres of the campus melted away.

How the University survived these blows, and the general depression which followed, is a story of a struggle won chiefly through the indomitable courage of its president, then and now Dr. Bowman Foster Ashe (page 570).

As recently as 1942 the University was conducting its courses in one three-story building, once a hotel in Coral Gables, and housing its students in an adjoining structure.

Enrollment Today Exceeds 11,000

Today, eight years later, it has an enrollment of some 11,000 students and operates on three campuses.

The heart and glory of the University of Miami is its main campus of 260 acres, built around the 40 acres left over from the depression, along with its "skeleton" of steel and concrete.

When World War II ended, the main campus was a wild stretch of palmettos and Caribbean pines, transected by an unused tidal canal. To this unprepossessing location wartime barracks from Florida military camps were hauled, other temporary buildings were erected, and classrooms and administrative offices were installed. Then it was that new building began.

Planners of the University have developed the campus in the spirit of Caribbean Florida's new architecture. All buildings have natural cross circulation of air. Sheltered galleries, walkways, and breezeways flank the outer walls. And they are built to withstand hurricanes. The architecture is startling to an observer accustomed to cloistered halls and ivy-covered walls on a university campus.

The new "dormitories" are not really dormitories at all, but modern apartment houses containing 533 apartments which accommodate from three to seven students each, and smaller units for the married GI student and his family (page 588). The project covers 60 acres of campus fronting on Dixie Highway.

"How much use do the boys make of their electric stoves and refrigerators?" I asked one of the University's administrative officers as we inspected several of these well-furnished apartments.

"We wondered about that ourselves at first," he answered. "But, surprisingly enough, the kitchen equipment of nearly every one is put to use. Of course the girls do their own cooking, and so do the boys. New boys usually stock up first with things they shouldn't, things their mothers never provided at home. But they soon discover that after all Mother knew something about preparing meals. They find their innovations either cost too much, thus wrecking their budget, or that their meals are not very well balanced. Then they settle down and get along nicely on about $5 to $7 a week apiece.

"When half a dozen new boys take an apartment, they require several weeks to iron out their housekeeping routine. Somebody *must* take out the garbage; beds *must* be made every day. But they soon learn to apportion the work."

The first new educational structure to be erected was the Memorial Classroom Building (page 574). Year-round temperature in its airy lecture rooms averages 75.2°. Then came the Student Club, bordering and partly overhanging an irregular lake made by widening a portion of the old canal (page 569).

This striking and popular meeting place includes the University cafeteria, a soda bar, lounging and reading rooms, and dancing terraces—a complete community recreation area. With a well-stocked tray from the cafeteria, I made my way to one of the pavilions stretching out over the water and ate a substantial meal there to the accompaniment of music drifting out from the soda bar's juke box.

All the time this new building was going on, the 23-year-old "skeleton" still rose stark and gaunt. Last autumn the architects turned their attention to it and, with a few adaptations, they used the original concrete and steel framework to erect the most imposing

* See "Men Against the Hurricane," by Andrew H. Brown, NATIONAL GEOGRAPHIC MAGAZINE, October, 1950.

Miami Beach News Bureau

Miami Beach's Luxury Hotels in Unbroken Line Front Atlantic's Sand and Surf

Hostelries in this winter playground have jumped from 61 to 365 in 20 years. The city plays host to 1,500,000 guests annually. Collins Avenue parallels the beach. Upper left: Bayshore Golf Course.

Wilson Hemmker

Marine Biologists Chart a Voyage to Study Mysterious Pastures of the Sea

The National Geographic Society and the University of Miami have jointly launched a long-range research program to study plankton, the drifting meadows of microscopic fodder on which most sea life depends for existence. Field of operations will be the Atlantic between southern Florida and the Bahamas. Dr. F. G. Walton Smith (left), head of the Marine Laboratory at University of Miami, directs the study. His associate is Dr. Hilary B. Moore, another top-ranking oceanographer on the Laboratory's staff (page 568).

structure on the campus, the Merrick Building (pages 581 and 585).

Ground soon will be broken for the new Law School building. Much of the money for this project is being raised by the law students and faculty members themselves.

A dozen more buildings must rise before the University plant reaches the minimum expectations of its loyal supporters. Meanwhile, the cultural impact of this lusty infant on Miami and, in the field of research, over a much wider area, daily becomes more pronounced.

German Dramatist's Play Presented

Miami, for example, has no legitimate theater. The University supplies that need. The Drama Department last season staged three major productions in its conventional Box Theater and four in its Ring Theater, with minimum runs of 12 performances each. More than 40,000 persons attend in a single season.

In the Box Theater I saw a presentation of *The Ascension of Hannele*, one of the plays of Gerhart Hauptmann, German dramatist who received the Nobel Prize for Literature in 1912. More or less rugged fare for the average American theatergoer, the production represented a highly successful effort to bring before a Miami audience a work by a playwright highly considered on the German-speaking stage but not too well known in the United States.

Later, in the Ring Theater, I saw the opening of Edmond Rostand's *Cyrano de Bergerac*, with a long-nosed Cyrano worthy of Broadway (page 587). John Behney, a University law student, gave a sterling interpretation of Cyrano before a sparkling first-night audience.

Gottscho

"Don't Fear This Harmless Florida King Snake"

Mrs. John Coggin, Jr., of the Miami Junior Museum, holds the reptile to demonstrate that it is nothing to be afraid of. The Miami Junior League opened the Museum in January, 1950, to acquaint youngsters, particularly newcomers from the North, with subtropical flora and fauna. Soon 3,000 school children a month were pouring through its doors (page 578).

The Ring, as its name implies, is a circular theater, with a small stage in the center, no scenery, and a minimum of furniture, props, and lighting. So intimate is the effect of this staging, with the players almost in the laps of the audience, that the onlookers seem to participate in the action.

Fred Koch, Jr., head of the Drama Department, told me of an incident which occurred during one Ring play. At a certain juncture a character lighted a cigarette. One night his lighter failed to work after repeated attempts. Casually, a spectator in the first row held out his own lighter, the actor took a puff, and the play went on. This all seemed such a natural thing to do that no one considered it an interruption.

The idea of the modern arena theater was developed by Glenn Hughes at the University of Washington, Seattle, in 1932. Now New York, Miami Beach, Atlanta, Dallas, and an increasing number of smaller towns have them.

Growing pains account for the fact that University of Miami's Ring is housed in a tent. The original quarters were entirely too small. Soon a new theater building will arise.

Symphony Presents Eminent Artists

The School of Music plays a leading role in the cultural life of Greater Miami. Of the 90 members of the University of Miami Symphony Orchestra, two-thirds are students and the remainder professional musicians. Last season large audiences heard its nine pairs of concerts, starring as soloists such distinguished artists as Helen Traubel, soprano; Lauritz Melchior, tenor; Jesus Maria Sanroma, pianist; Jean Bedetti, cellist; and Frank Edwinn, basso. The University also presented the Budapest String Quartet in recital.

The University Band (page 576) and the Chorale add to the community's musical fare.

Miami News Bureau

Bayfront Park's New $80,000 Band Shell Creates the Illusion of a Giant Sea Shell

The stage accommodates 200 performers; the orchestra pit, 150 musicians; outdoor seats hold 10,000 persons. Gunite, a cement and sand mixture, covers the steel frame with a smooth, white finish (page 583).

One wing of the new Merrick Building houses the art galleries, where the Art Department presents frequent showings of loan collections (page 570). I saw a representative group of contemporary American paintings lent by the Whitney Museum of American Art, the Museum of Modern Art, and other well-known galleries.

The University is keenly aware of its proximity to Latin America. Its closest big college and friendly neighbor, even closer than the University of Florida at Gainesville, is Cuba's venerable University of Havana.

More than 140 students from Latin America and two score from Puerto Rico are enrolled at Miami. Intellectually and socially, these boys and girls fit well into the student body from the time of their arrival. At first they naturally tend to clique in a language group, but as they learn to speak English they engage in their share of campus activities.

The University's Hispanic-American Institute is well known for its published Hispanic-American Studies. Inquiries from other universities are numerous and include two received on the same day from such distant points as Wellington, New Zealand, and Tomsk, Siberia. Institute lecturers include prominent South American educators.

The University of Miami boasts the first endowed chair of Human Relations in the country, and it also was the first school to offer a course in Human Relations as an undergraduate major. The chair was established by Mr. and Mrs. Benjamin E. Bronston, of Miami Beach.

The students plunge into discussions of dynamite-laden situations and let off steam by engaging in practical ventures, such as raising eight tons of food and clothing as Christmas gifts last year for two-thirds of Florida's Seminole Indians. Their approach to social problems, however, is that of students and learners, not reformers.

Books by the Truckload

Nothing better illustrates the rapid growth of the University of Miami than the upbuilding of its library. In 1940 volumes numbered 53,861. Five years later the figure had grown to 85,545. Today books total a quarter of a million on a wide variety of subjects.

While I was making this survey, the librarians were awaiting a shipment of 33,000 volumes purchased from a Boston bookstore. This will be the last general consignment bought, since any more large orders doubtless would contain too many duplicates.

The University has contracted to purchase the large collection of Floridiana acquired by Dr. Mark F. Boyd of Tallahassee over a long period of years. Books in this assortment are available now to students upon request. It rivals in importance the Floridiana collections owned by the State Library and the University of Florida.

The University also has a collection of 800 rare Spanish volumes, obtained from a California estate.

Developing an Improved Battery

In the general field of research the University makes important contributions. The Electronics Research Laboratory, for example, is perfecting a battery to which water need never be added. Copper plates have been substituted for lead. When completed, the battery is permanently sealed, so that it never gives off any noxious gases. Those generated are recombined into water. Value of such a battery for either airplanes or submarines is obvious.

I was shown also a small hearing-aid battery designed on the same principle. As in the larger batteries, use of copper plates means reduction in weight to half that of a standard battery. More important, it can be recharged at inconsequential cost.

The Electronics Research Laboratory is testing an ozone treatment to preserve bananas, citrus fruits, potatoes, and other produce during shipment. Surprisingly successful results have been obtained by introducing ozone into refrigerator cars just after they have been loaded with perishables.

Different but also significant approaches are under way on the south campus—an extensive research program in tropical foods.

Mango, guava, Barbados cherry, carissa, and soursop have been made into purees and used to flavor ice cream. The research men themselves constitute a taste panel and sample the new food products to determine whether they like them and whether they serve best as "toppings" or as component parts of ice cream.

Two years ago the Food Research Laboratory worked out a process for making frozen banana puree. This was not easy, for previous processes darkened the bananas and detracted from their salability. A manufacturer of baby foods is successfully using the new method.

Dr. Arthur L. Stahl, Director of the Laboratory, did important work in frozen orange juice concentrates, now so popular all over the country. Today he is testing other juices in the laboratory's miniature plant model of a juice concentrator. I stood by as he went to work on a gallon of pineapple juice, reducing it to a concentrate by evaporation. Then I tasted it after water had been added. It suited me.

Bean Cooking Made Easy

In another building I saw full-sized factory equipment employed in packaging fresh-frozen stringless beans. One innovation is a nipping machine which not only takes off the ends but cuts the beans up into small lengths, so all that remains for the housewife to do is to transfer them from package to cooking utensil.

Only a few of the wartime buildings on the south campus are in use, but the 2,048 acres, under lease from the U. S. Navy, are being utilized as a nucleus for a future School of Tropical Agriculture. Some 5,000 young trees have been set out—avocados, guavas, white and yellow sapotes, lichees, limes and other citrus fruits, mangoes, and sapodillas. For ease in recording data they are planted in exact geometrical patterns, with a block of 10 acres allotted to each species.

Fruit from the trees eventually will afford an ample supply to the Food Technology Department's processing and packaging units.

Studies of a new pest, a voracious beetle named "heilipus," whose larva gorges itself under the bark of avocado trees with devastating effect, are expected to lead to the saving of many groves in south Florida and elsewhere.

Identifying the Red Tide

Researches of the Marine Biology Department have gained wide acclaim. For example:

In November, 1946, a so-called "red tide" appeared on the west, or Gulf, coast of southern Florida near Naples. Fishermen reported countless dead and dying fish floating in the vicinity and about 10 miles offshore. The sea water was strangely discolored.

By the end of January, 1947, the red tide had moved as far north as the bays and beaches of Fort Myers, Sanibel Island, and near-by areas. During the summer of 1947 the mysterious scourge broke out again, causing even greater losses of fish and reaching north almost to Tarpon Springs. By the end of August it had disappeared and has not returned to date.

Many conflicting theories as to the nature of the red tide were advanced. But the University's Marine Laboratory definitely established the immediate cause. The reddish color and the slimy consistency of the water occurred from the presence of a

previously undescribed microscopic form of life, now known as *Gymnodinium brevis*. It is little more than one thousandth of an inch across. With the aid of two whiplike threads attached to its tiny body, it moves jerkily through the water. Normally it is present in sea water in harmless quantities of less than 1,000 to the quart.

But during the red tide more than 60 million of the little pests were concentrated in a single quart of sea water, and in such density became violently poisonous to fish.

How or why the abnormal concentration occurs at irregular intervals is still the subject of searching scientific inquiry.

The Marine Laboratory was established in 1927 as a tropical marine station readily accessible to the educational and scientific centers of the United States. South Florida climate permits study of marine biology under favorable year-round conditions. Terrific competition for food and space on the coral reefs and the enormous variety of marine species engaged in this struggle provide a living classroom and workshop. Along Miami Beach and the Florida Keys the Gulf Stream is but four miles offshore.*

I made several trips to the reefs on Marine Biology boats. On one occasion members of a class took turns descending to the floor of Biscayne Bay in a diving helmet (page 575). On the bottom they picked up coral and numerous other types of marine life.

My activities were confined to helping man the air pump and inspecting the specimens retrieved from the bottom. But photographer Justin Locke, more adventurous, donned the helmet himself and enjoyed his brief underwater experience.

The inoffensive marine life thus disturbed by the youthful researchers usually takes its uprooting calmly and makes no fuss when it is hauled aboard. But there are exceptions.

Locke was anxious to make a close-up of a few specimens held in the palm of Dr. Charles E. Lane's right hand. The doctor obligingly complied with the request and artistically arranged a sea urchin, some coral, bits of sponge, a small conch, and a shamefaced crab in his hand, which he held out over the gunwale. Locke was about to release the shutter of his camera when the crab so far forgot its embarrassment as to give Dr. Lane a mighty nip in his thumb.

More quickly than the speed camera could record it, Dr. Lane jumped backward, lustily crying "Ouch!" at the same time. Presto! All the specimens, including the crab, were en route to the bottom of the sea once more.

The researches of the Marine Biology Department are interesting and varied, as a partial list of its publications shows: *Hints on Smoking Fish and Other Seafood, Florida Crawfish Research, Biological Aspects of a Potential Sardine Industry in the Caribbean Area, Survey of the Sponge Grounds North of Anclote Light, A Fisheries Program for Florida, Atlantic Reef Corals, Sea Turtles and the Turtle Industry, The Spiny Lobster Industry of the Caribbean and Florida, The Commercial Shrimp Industry of Florida, Check List of the Florida Game and Commercial Fishes.*

Long-range Study of Plankton

Latest scientific investigation of the Marine Biology Department is a joint study with the National Geographic Society of oceanic plankton, the drifting "meadows" of microscopic plant and animal life which sustain most of the fish population of the world (page 564). Work will be conducted on a year-round basis in the Atlantic between southern Florida and the Bahamas.

Under a high-powered microscope the sea creatures to be studied present a weird assortment of odd shapes and often delicately beautiful coloring—a surrealist menagerie of infinite variety. The name "plankton" is derived from the Greek word for "wandering," which describes the drifting life of these minute organisms.

To the fishes of the sea, large or small, plankton is as indispensable to survival as the grasses are to the animals which range the land. When plankton pastures dwindle, the fish are fewer. When they are lush, the fish teem.

How do these plankton meadows materialize? Why do they migrate from time to time? These are two of the many questions to which answers will be sought.

The University's research boat *Megalops* (page 575) will periodically spend 24 hours on station to give a round-the-clock check on the way the plankton pastures move up toward the surface with clocklike regularity at nightfall and descend again to lower depths with the coming of day. What causes this mysterious movement? †

False echoes caused by this shift of infinitesimal creatures gave trouble to the Navy's

* See, in the NATIONAL GEOGRAPHIC MAGAZINE: "Coral Castle Builders of Tropic Seas," by Roy Waldo Miner, June, 1930; "Life on a Coral Reef," by W. H. Longley, January, 1927; "Treasure House of the Gulf Stream," by John Oliver La Gorce, January, 1921.

† See "Exploring the Mid-Atlantic Ridge," by Maurice Ewing, NATIONAL GEOGRAPHIC MAGAZINE, September, 1946.

Kodachrome by Hattie Lacks

Lakeside Pavilions of U. of Miami's Student Club Lure Undergrads All Year Round

The streamlined recreation center on the Main Campus at Coral Gables, Florida, houses a large cafeteria, snack bar, lounge rooms, and dancing areas.

University of Miami's President Envisions a New Pantheon for the Art Galleries

How Many Art Lovers Brain Waves? This Electric Gadget Finds Out

Headlights at Night Flash a Trail of Lights in Downtown Miami's Second Avenue

[illegible]

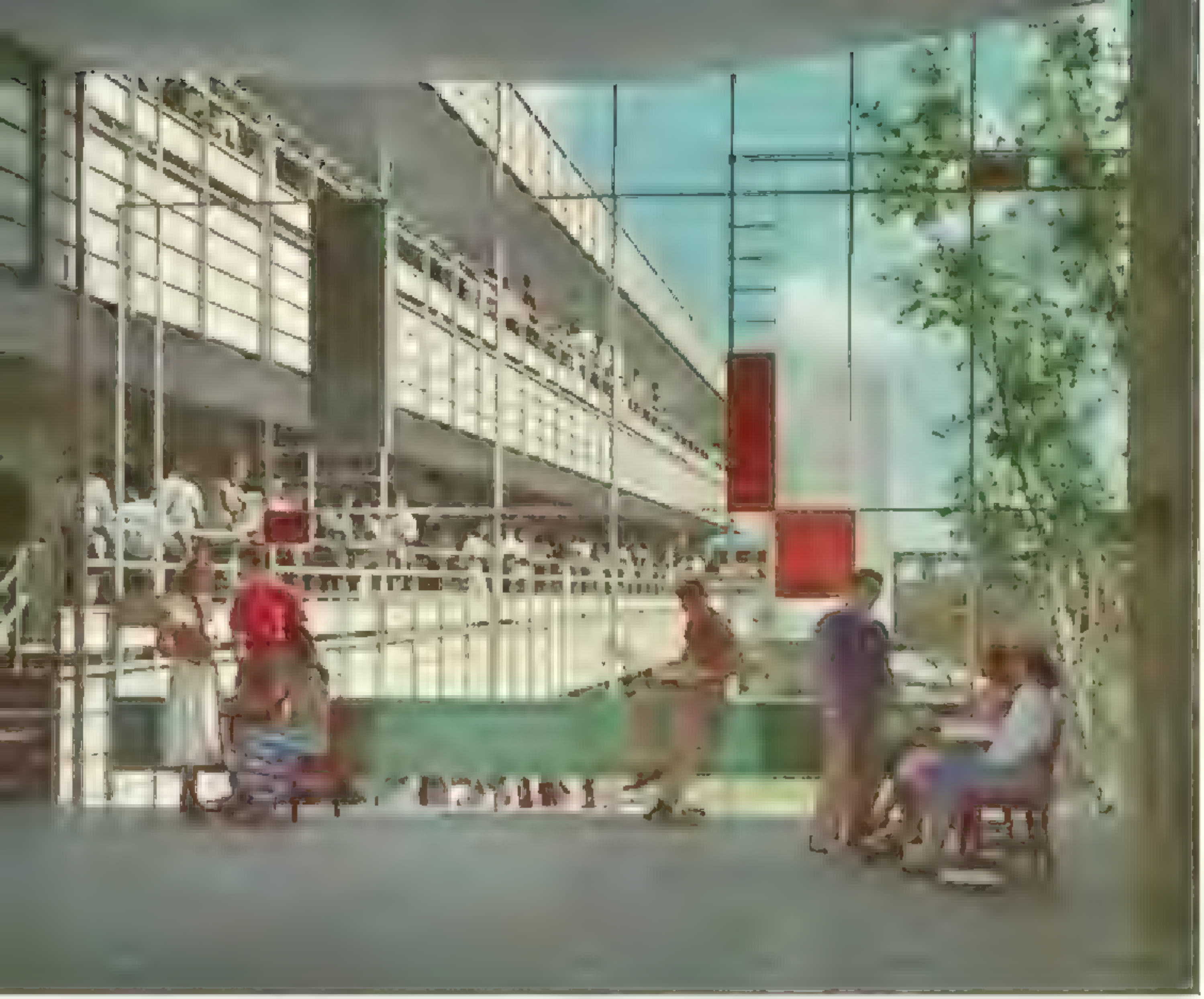
Merrill Panitt Proves Magic Be Measured in Box Offices

[illegible]

"Ghost" Puerto Rico's Spicy Club Palm Beach as Sharp as It Looks

[illegible]

Dr. David Fairchild, Famous Plant Explorer, Inspects a Lowerie, Queen Palm in the Tropical Garden Service for Hers in Miami



Upscaler Decks Lease Students to Classrooms in One of [illegible] Miami's New Hells of Learning

[illegible]

Clutching a Scrotch, a Helmeted U. of Miami Marine Biology Diver Rises from Biscayne Bay

At Menon Fromall Games They Huff and Puff in the Brass Orchestra Does Play Bach

electronic sound-ranging instruments during World War II submarine hunting.

Results of the study will, when completed, become available both in nontechnical articles in the NATIONAL GEOGRAPHIC MAGAZINE and in technical reports to be contributed to world knowledge through universities and colleges at home and abroad.

The Medical Research Unit of the University functions in cooperation with the U. S. Veterans Administration and occupies quarters in the huge Veterans Hospital in Coral Gables, formerly the fashionable Miami-Biltmore Hotel. The Unit is built up as a nucleus for a school of medicine, long a dream at the University of Miami.

Although the administrative office is lost in a corner of the ornate ballrooms of the former hotel, researches are conducted in modern laboratories completed this year. A corps of eminent researchers now is engaged in studies of compounds capable of prolonging the action of adrenaline secreted by the adrenal glands; compounds effective as antidotes to barbiturates introduced into the human body in overdoses of sleeping pills; the effect of various drugs when used with insulin; transplantation of endocrine glands; effect of shock on kidneys; and causes of various tropical diseases.

Somewhat overwhelmed with the scope of the University's activities, its meteoric growth and its impact on Miami, I sought out Dr. Ashe to learn his views on the University's role in this ever-growing area.

Students from 46 States, 20 Countries

The University maintains a president's modern office in downtown Miami's chic Coral Gables, near the Lou Boot. Here also is the large room in which meetings of the Board of Trustees are held when the Lee Chapel demands a lowland location.

But Dr. Ashe's principal administrative work is performed in the Administration Building, erected on the main campus by combining two old Army barracks. It was here that I found him.

"We have now been in existence 24 years," he said. "We have some 9,000 full-time students from 46 States and 20 countries and approximately 2,000 students in the evening Adult Division.

"We have built on a permanent and well-planned campus of 260 acres several major educational buildings, several minor ones, and modern dormitory facilities. In addition to regular instruction in the College of Arts and Sciences, the School of Business Administration, the School of Law, the School of Education, the School of Engineering, the School of Music, and the Graduate School, we have developed important research activities. These are in the fields of tropical agriculture and horticulture, experimental medicine, marine biology, and several of the laboratory sciences.

"Over the next few years we expect to push further many of these basic researches and to add several additional schools. We must build a number of new educational buildings on the main campus, including a great new library building. Our library is growing at a terrific rate. We must have the first large unit of a spacious science building, a large auditorium, and adequate quarters for our students in music, drama, and art.

"Earn we need adequate endowments to help support the University. We are not tax-supported and earn most of our income.

"The community is growing very rapidly, and has changed its character from purely a winter resort to a commercial and industrial metropolis. Agriculture in the back country has multiplied probably ten times in the last 20 years.

"It apparently will be necessary for this University to become quite large. We consider the first 24 years a period in which the University was established. The next few years should be a period of development and improvement."

The decisiveness with which Dr. Ashe summed up his views, his past record as a man undismayed by formidable problems, and the caliber of the men who back him up, his progressive Board of Trustees,* combined to inspire in me the feeling that even bigger things are in store for the University of Miami.

Although the University's influence is widespread, it would be a mistake to assume that it is responsible for all of Miami's cultural life. For example:

An outstanding musical organization in the area is the Miami Civic Music Association. For the last 15 years its president has been Charles H. Crandon, in whose honor the area's newest public recreation park on Key Biscayne has been named (page 592).

This democratic assemblage of music lovers

* Members of the Board of Trustees of the University of Miami: Bernard F. Ashe, Harry Wood Bassett, Senior Black, Rosie Brownstein, Oscar E. Brody, [illegible] Eaton, George L. Ezell, Robert Grossman, Edmund A. Hughes, John S. Knight, John Oliver, Girard Lamed J. Mahoney, Dr. Bascom H. Palmer, Robert Portland Jr., Fleming G. Richey, Donald H. Rodgers, McGregor Smith, Arthur A. Vogt, and George F. Whitton. Honorary Member, William H. McKenna.

has a membership of 2,200 and a long waiting list. Six or seven concerts by world-famed artists are presented each season. No one connected with the association receives a salary. Last season artists appearing were the Robert Shaw Chorale; the Marionna Dance Ensemble; Elke Stignani, soprano; Bruno Maiselwitsch, pianist; the Trieste Chamber Music Trio; Bruno Rabinoff, violinist; and Jussi Bjoerling, tenor. Concerts are held in the Miami Edison High School Auditorium.

Miami Hears Grand Opera

The Opera Guild of Miami, under the artistic direction and general management of Dr. Arturo Di Filippi, a member of the University of Miami faculty, has brought grand opera to Miami for ten seasons.

Miami music lovers contribute to its support, subscriptions ranging from $2,000 down to $10 annually. Miami singers and music students from the University make up the chorus and supporting casts; lead roles are sung by Metropolitan Opera stars imported for the occasion.

Last year *Carmen*, *L'Elisir d'Amore*, and *I Pagliacci* coupled with the *Secret of Susanne* were presented.

Like any other civic opera organization, the Miami group constantly seeks funds to keep solvent. Dr. Di Filippi surmounted one crisis last season when he feelingly proclaimed in the newspapers that a horse fared better in Miami than a singer, and that he wished he were a horse.

"Everybody would dress up and come to see me run," he added. "I would then sing out an operatic cadenza, with a snort at the end, that would bring me in a subsidy for the Opera Guild that I sorely need. Oh, what an operatic fad that would be!"

The very next day Dr. Di Filippi received a check for $25 from a sympathetic reader who observed, "Who could say neigh to an appeal such as yours?" Other subscriptions followed to save the day.

Then there is the Philharmonic Society of Greater Miami, organized in Coral Gables, which makes it a point to feature south Florida artists and composers.

Barry College, located on an 80-acre campus in a pleasant suburb north of Miami, also makes a contribution to the area's cultural life. A Catholic women's college of liberal arts and sciences, it is celebrating this year the tenth anniversary of its founding.

Barry's Christmas oratorio and pageant, *Christmas Triptych*, and its Passion oratorio for Palm Sunday, both composed by the head of its Department of Music, attract audiences of more than 1,000. Once a year the Dramatic Department stages a serious play, such as *The Song of Bernadette*; in lighter vein, they gave plays such as *Cinderella* for the children of the community.

About 15 percent of Barry's 289 students are from Latin America and Puerto Rico. They don the folk costumes of their countries to participate in Greater Miami's annual Pan-American Day activities (page 569).

The campus is famous for its tropical beauty, highlighted by a long double row of towering royal palms which extend westward from the entrance to a tiny chapel at the other end, and by brilliant, multihued bougainvillea which overhangs the façades of classrooms and dormitories.

Among the thousands who have moved permanently to the Miami area in postwar years are many children, suddenly introduced to a subtropical region totally foreign to them. In most instances their parents find life just as new and hence are unable to answer hundreds of inquiries put to them by their young sons and daughters.

To remedy this situation, Miami's Junior League opened a Junior Museum [illegible]. By May school children were visiting it at the rate of more than 3,000 a month. Also, the museum's natural history curator had lectured to 11,000 children in their schools.

A well informed young woman accompanied me through the reconverted old mansion which houses the exhibits. Tours take from an hour to an hour and a half.

Sparkles Stars at Junior Museum

Beginning in the Early Florida Man room visitors move through the Seminole Gallery, always popular with the youngsters; pass through a natural history gallery where Sparkles, a ring-tailed monkey without rings on her tail, is a source of constant delight; and through other rooms devoted to primitive African crafts, Latin-American and Oriental curios, and a coral exhibit. Next year the Museum will have a marine life exhibit.

In nearly every room, to rivet youthful attention, something alive is exhibited, including parakeets, tree snails, and even snakes in well protected cases. But Sparkles' only real rival for the children's affections is Mona, the goat, which is kept out in the yard. Educators are enthusiastic over the whole informative visual project (page 565).

For students and lovers of horticulture a visit to Miami's Fairchild Tropical Garden is an experience not to be duplicated anywhere in the United States (pages 572-3).

"He Carved a Great City from a Jungle" — Carl Graham Fisher Memorial

[illegible]

[illegible] Mrs. Kenneth H. Montgomery [illegible]

[illegible] Dr. Dana Brown [illegible] for the United States Department of Agriculture and [illegible] Nether [illegible] Pines. [illegible]

[illegible] Dr. Dana [illegible]

[illegible] the acacia tree from the South African veldt; umbrella tree [illegible] Australian baobab tree from Africa [illegible]

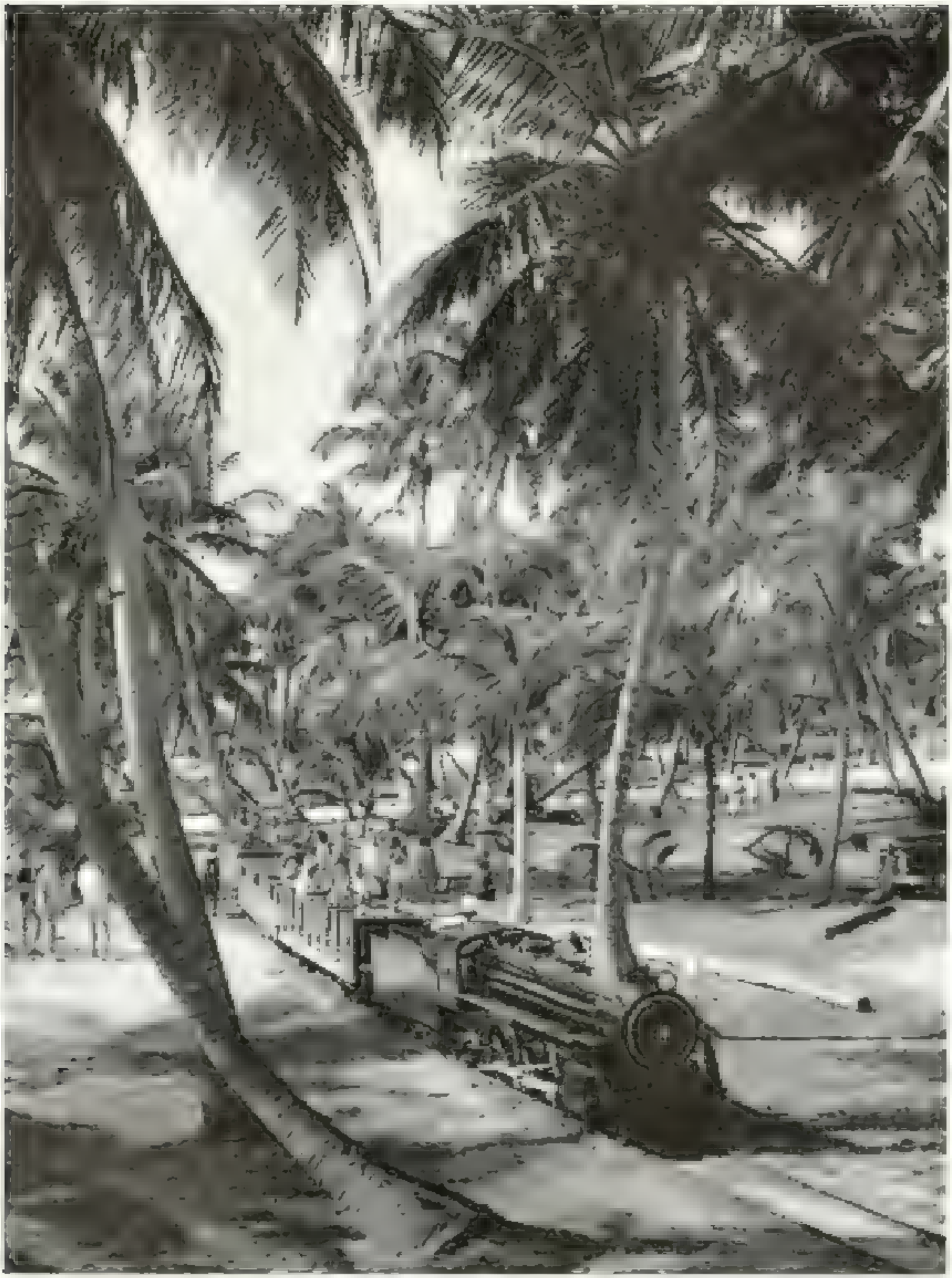
[illegible] United States [illegible]

[illegible] with the [illegible] Dr. [illegible]

Skyscrapers Dot Growing Miami, Fishing Harbor 50 Years Ago

Dormitories at U. of Miami Make Up a Vast Housing Project

[illegible]



Bisnagra Bay, Atlantic & Gulf Railroad Winds Through Palm Grove into Pensacola [illegible]

The Montgomery Museum and Library on the grounds houses the Brett Memorial Library of more than 1,000 books on botany, horticulture, and related subjects. Here too is exhibited a large array of articles made from palms from all parts of the Tropics—showgirls, carved coconut shells, ornaments, musical instruments, fine sailcloths, fish nets, basketwork, and dolls.

Not far away is Matheson Park, stretching between the main roadway from Coral Gables and the shore line of Biscayne Bay. Its palm-shaded bathing beach and pleasant tropical picnic grounds attract thousands of Miamians the year round.

Opposite the park, on the other side of the roadway, lies a large undeveloped tract known [illegible] primitive tropical growth in the Miami area, [illegible] in a natural state for botanists to study.

Face Lifting in Bayfront Park

Every visitor to Miami inspects Bayfront Park soon after arrival. It is in the foreground of every skyline picture made from the bay. But changes have been and are being made here to alleviate Miami's cultural growing pains (page 580).

Construction of a $1,000,000 Miami Memorial Library, a two-story building of classical design faced in Georgia marble, is under way. Fifty yards off, a new $60,000 bandstand has been completed (page 560). The front of the new structure gives the general impression of a giant sea shell. The huge stage accommodates more than 200 performers, and the orchestra pit has space for a 150-piece orchestra.

Here free band concerts are heard twice a week during winter and spring and once a week in autumn. Miami boasts that from October 1, 1949, to April 1, 1950, not a single concert was canceled because of rain or cold weather.

Another recent Miami transformation has taken place on Dinner Key, once a palm-shaded bit of land a short distance offshore from Coconut Grove.

Biscayne Bay's original settlement was in Coconut Grove, centering around Dr. Horace Porter's store, opened in 1870. By 1874 the town had a post office. The original settlers often paddled over to Dinner Key for picnic dinners, hence its name. During World War I the War Department filled in the intervening shallow water and made the key part of the mainland. Later it became an active naval base.

Then Pan American Airways arranged to take the key as its International Marine base, scene of operations of the company's famous flying boats to Cuba, the Bahamas and South America. During World War II it was turned into a cadet training school where Pan American's seasoned operators taught American and English flying cadets navigation.

Now the city of Miami has acquired Dinner Key and transformed it into a convention site, with an Exposition Building seating 10,000 persons and containing a large restaurant. While I was in Miami, 10,000 Kiwanians descended on Dinner Key for their annual convention. The city also is building a municipal yacht basin at the key.

A stadium, primarily for baseball, seating 9,500 persons, has been completed at a cost of more than $1,000,000. For the first time in stadium construction in the United States, architects covered it with a cantilever roof.

Most popular of all Greater Miami's recent developments for the pleasure of permanent residents and winter guests alike is Crandon Park on Key Biscayne. Cost of the park, and the 4-mile Rickenbacker Causeway from the mainland, exceeded $3,000,000.

Heirs of the late Dr. W. J. Matheson donated the north half of Key Biscayne to Dade County for public park use. The tract was named for Charles H. Crandon, long a member of the Board of County Commissioners of Dade County, in which Miami is located, and a tireless worker for the community's civic betterment. Development was delayed by World War II. Park and causeway were formally opened on November 9, 1947.

Fisherman Line Bridge Rails

I drove over the Rickenbacker Causeway one sunny May day, passing scores of fishermen, some of whom were actually catching fish from the railings of the bridges. Located just 10 minutes from downtown Miami, the park stretches along the key for more than two miles. Coconut palms flank the roadway. I turned into one of the huge specially made parking areas, left my automobile, and strolled to the charming ocean-front promenade and palm-shaded beach, which attracts thousands of bathers. Miamians point out that average winter water temperature is 72°.

Opening out in fan shape, on either side of the park's central esplanade, is a group of buildings housing stores and shops, well-ordered refreshment stands, and bathhouses equipped with lockers and rest rooms.

One of the most popular features is a miniature scenic railroad which winds through one and a half miles of tropical jungle (opposite). Bearing the imposing name of Biscayne Bay,

Atlantic & Gulf Railroad, the line has an even more impressive list of 50 honorary vice presidents, each assigned to a particular "duty."

Among the vice presidents are: Bowman F. Ashe, in charge of cowcatchers; Bing Crosby, section gangs; Douglas Fairbanks, whistle stops; David Fairchild, observation cars; Gilbert Grosvenor, rails; H. V. Kaltenborn, cabooses; Capt. Eddie Rickenbacker, traffic; Juan Trippe, communications; Robert R. Young, rolling stock; and, only feminine official, Lily Pons, whistles.

Meteoric Growth of Miami Beach

Most phenomenal growth in the entire south Florida area has taken place at Miami Beach, a strip embracing 7.1 square miles of land and 7 square miles of water, which lies to the east directly across Biscayne Bay from Miami and fronts on the Atlantic Ocean. The city of Miami Beach also includes a group of man-made islands in Biscayne Bay (page 590). Three large causeways connect Miami Beach with the mainland of Miami, two free and one toll.

In 1915 our town was incorporated. Today it is one of the world's greatest winter playgrounds. In 1915 assessed valuation of real property was less than a quarter of a million dollars; today it is $250,000,000.

[illegible] years ago Miami Beach had 61 [illegible]. Its ocean front is sandily flanked by so many huge modern hostelries that one could stay in a different hotel every day for a year (page 563). Nine more, under construction, will bring the total to 374. In addition, there are 1,600 apartment houses.

Since World War II Miami Beach has entertained about 1,500,000 guests each year. They enjoy not only an 8-mile ocean-front beach, but 15 parks, playgrounds, and recreation centers, 135 private and public swimming pools; two public and two private 18-hole golf courses; 15 motion-picture theaters; and 430 establishments licensed to serve food.

In a small park and playground for children at Alton Road and Lakeview Drive stands a memorial of bronze and granite to Carl Graham Fisher, the man whose vision, courage, and millions built a great all-year resort. Its inscription succinctly tells the story of Miami Beach: "He Carved a Great City from a Jungle" (page 590). Before his death in 1939 Fisher had engineered one of the biggest real-estate developments of the eastern seacoast and had lived to see his dream come true.

Miami Beach also has [illegible] this one built on an island in the [illegible] bay to another intrepid Florida pioneer. Both island and memorial were raised by pioneer developer Carl Fisher to the memory of Henry M. Flagler, who brought the railroad to Miami in 1896, and continued it on to Key West in 1912.

The line to Key West was partially destroyed in the vicious hurricane of 1935. Since then it has been converted into the scenic Overseas Highway, over a large portion of the original stone and concrete trestlework, from Florida key to key, to the doorway of Key West. Thousands of visitors annually enjoy this automobile "voyage."

Flagler's ardor in developing south Florida fired Fisher's enthusiasm and prompted him to present the striking memorial to his own new city (page 590).

The rapid growth of Miami Beach as a resort center tends to obscure its cultural aspects, but they are unmistakably present.

Twenty-four years ago, for example, the Committee of One Hundred was formed. Members were executives of large and small corporations from the North and Midwest who had built winter homes on Miami Beach and adjacent islands. They wanted to form friendships in their adopted seasonal community among men with common interests.

They acquired a clubhouse which included an auditorium. Membership today is limited to 300. Every Tuesday evening over a period of some 15 weeks in the winter season the group gathers to hear prominent speakers brought from all over the country to address them on national and international subjects.

New Hospitals in Miami Area

In postwar years Miami has taken rapid strides to enlarge its hospital facilities. Today Dade County has 21 hospitals with 2,692 beds and 326 bassinets. The healthful year-round climate and Gulf Stream-cleansed air are highly beneficial to heart cases especially, who come from far and near.

Largest in the area is the 600-bed Jackson Memorial Hospital, recently taken over by the county and well on its way to becoming a modern medical center. A new $2,500,000 building is being added to the plant, and State and Federal funds of more than $1,000,000 have been provided for installation of a 100-bed psychiatric ward. A Latin-American wing is soon to be added.

Next largest hospital is the Veterans Administration Hospital, formerly the [illegible] Miami-Biltmore Hotel, in Coral Gables.

The South Florida Children's Hospital, for boys and girls under 16 and for polio victims of all ages, opened last March. The main building was erected at a cost of $875,000.

The new $6,000,000 Mercy Hospital, built

Modern Parade Clothes: a 24-year-old Steel "Skeleton" to Frame Eero Saarinen's Miami Bank Building

University of Miami's Chief Goodin Iron Arrows Holds Aloft the Honor Society's Symbol in Ceremonies Based on Seminole Ritual

Long-nosed Cyrano de Bergerac Pens a Love Letter as Young Poets Chatter Irreverently at Mont Saxet in a Scene from Rostand's Play

Former GI's Poor as Married GI Student Lives with His Family in a Modern Housekeeping Apartment on the U. of Miami Campus

Barry College Gives Tour Puerto Rico and Cuba Prize Trip on Pan-American Flies

[illegible]

"Sweet Adeline" Barbershop Harmony of Pi Kappa Alpha Pledges Resounds

[illegible]

Islands Dredged from Biscayne Bay 30 Years Ago. Miami in background, Flagler Monument to left, Flamingo Hotel in foreground

Two Years of Inoculations with Cobra Venom Makes Willie Hoist Immune to Bites and the Poisonous Beetles

Brilliantly Plumed Macaws and Stray Parakeets Live Unscaged at Miami's Parrot Jungle

on land formerly a part of Vizcaya, the James Deering Estate (pages 595-604), is soon to be dedicated. Over-all plans call for a 304-bed hospital, nurses' training school and home, and clinical buildings.

One of the late Carl G. Fisher's Miami Beach hotels, the Nautilus, which was transformed into a Veterans Hospital, now has been turned over to a nonprofit group of trustees and renamed Mt. Sinai. It has 255 beds and 50 bassinets.

Another new and well-equipped hospital is Doctors, built by a group of physicians on property adjacent to the University of Miami.

Individual private scientific research proceeds in many quarters in the area. For example, about 10 miles south of Miami William E. Haast has conducted a serpentarium for the past two years. Last May he brought back from India 370 cobras to add to his stock of Indian, Egyptian, and spitting cobras, and many other varieties (page 591).

To maintain his serpentarium, Haast charges admission to the public, but he is more interested in the scientific aspects of snake raising, including the extraction of cobra venom for use in serum.

Immune to Cobra Bites

In September, 1948, Haast started a program of self immunization to cobra bites. He injected distilled raw cobra venom into his blood, beginning with a mild dose and gradually increasing it. In August, 1949, a cobra bit him without appreciable effect.

When he first started his program, he took a diluted injection every few hours. Now that he is immune, he finds one every three months is sufficient to keep him in that protected state.

The Miami area also boasts a parrot jungle and a monkey jungle. Both are commercial ventures, but neither could exist anywhere except in a subtropical area.

Scores of brilliantly plumed parrots fly free in their sanctuary, some returning to perch on spectators' shoulders and arms to have their pictures made (opposite). Parakeets and a flock of flashing flamingos also dwell within the limits of this preserve.

Many varieties of primates, including Rock of Gibraltar monkeys, baboons, chimpanzees, gibbons, and mandrills, live in the monkey jungle.

Dangerous varieties are confined. But the little group of rhesus monkeys turns the tables on spectators here. Visitors stroll through caged passageways with the rhesus monkeys on the outside, looking in at the strange humans behind the wires.

To see another private scientific venture, I called on Mr. Charles Crandon, whose manifold interests include the Miami Civic Music Association, development of the Dade County park system, expert woodworking, and avocado and mango raising, all in addition to his personal business enterprises.

I called to look into still another venture of this versatile gentleman—his earthworm-raising project!

Earthworms Boon to Avocado Trees

As I entered the ample grounds surrounding his home in Coral Gables, I was impressed by the grove of heavily laden mango and avocado trees. Beneath each was a mulch of grass, weeds, and leaves.

"I never spray my trees," Mr. Crandon said. "My earthworms down under that mulch keep them healthy. When I first planted the trees four years ago, the soil here was white sand and I had to blast holes for the roots. Look at it now."

He pulled away the mulch to reveal the dark soil, enriched by earthworm castings. We went to the rear of the property. Here were huge compost piles, each with a sprinkler system over it to keep the compost—principally leaves, pine needles, and garbage—moist in dry weather.

"We're raising millions of earthworms here," Mr. Crandon said. "But we have to watch for their enemy, the mole cricket. It lives on them. It's larger than a cricket and burrows into the ground very fast."

Everything growing on the property is enriched with earthworm castings, including rosebushes and Chinese lychee trees.

Tests Against Florida Sunshine

For many years General Motors Corporation has maintained a Research Laboratories Division in Miami under the direction of Dr. Earl M. DeNoon, in cooperation with the widely acclaimed scientist and inventor Dr. Charles Franklin Kettering.

I visited the laboratories near the International Airport, where most of the work is done out of doors. Dr. DeNoon also operates here the South Florida Test Service, for other manufacturers. A host of materials is exposed to weathering and tested in the Florida sun.

From a weathering standpoint, few other places in the world have as interesting a climate as southern Florida. When a refrigerator manufacturer, for example, can produce an effect finish on his product that will stand tests in Miami, he can be sure that it will stand up anywhere in the United States.

A Banyan Tree's Descending Roots Strangle a Sidewalk in Coconut Grove

[illegible]

These manufacturers, as well as those engaged in [illegible] [illegible] [illegible], [illegible] and [illegible] [illegible] [illegible] [illegible]. Hundreds of small wood [illegible] [illegible], [illegible] with a [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] hundred [illegible].

A [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] is [illegible] [illegible]. Some [illegible] [illegible], for example, [illegible] [illegible] [illegible]. [illegible] [illegible] within a few [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Miami today [illegible] [illegible] [illegible] [illegible] as well as [illegible] [illegible] newspapers, the Miami News, owned by James M. Cox, former Governor of Ohio, and John S. Knight's Miami Herald, [illegible] [illegible] to greater efforts.

Now the whole [illegible] [illegible] over a project of [illegible] proportions, a [illegible] [illegible] Pan-American [illegible] [illegible]. [illegible] [illegible] means the transformation of Miami from a city [illegible] [illegible].

Miami's Pan-American Vision

This year's [illegible] [illegible] May call for a big Pan-American center [illegible] [illegible] near Biscayne Bay.

The object is to bring North and Latin America together commercially and [illegible] [illegible] [illegible]. The proposed center would have buildings for [illegible] [illegible] [illegible].

And visitors from many [illegible]. [illegible] [illegible] [illegible] a [illegible] [illegible] which [illegible] [illegible] the future.

Vizcaya: An Italian Palazzo in Miami

By William H. Nicholas

With Illustrations by National Geographic Photographer Justin Locke

ON CHRISTMAS Day 1916, when the late James Deering opened the doors of Vizcaya in Miami, Florida, he saw a dream come true. This American business genius had created in the New World an Italian palazzo, comparable only to historic fortress-palaces of the 16th century.

By use of historic example and antique furnishings, and with extraordinary verisimilitude, he had achieved a triumph in recalling a golden age of art and architecture. His new home reflected the splendors of courtly Roman and Venetian residences, furnished in its entirety, as they were, in the chief decorative styles of more than four centuries ago.

Mr. Deering, an International Harvester Company executive, had traveled widely abroad. For 25 years he had collected in Europe architectural backgrounds, rare period furniture, textiles, sculpture, and ceramics. To enshrine them he built Vizcaya, as home until his death in 1925. His palazzo on Biscayne Bay became a repository of Italian decorative art unexcelled in America. His art-loving heirs have kept it so to this day.

An army of 1,000 artisans composed Italian stonecutters, cabinetmakers, plasterers, painters, and gifted landscape gardeners built Vizcaya, their labors extending over five years. Mr. Deering purchased nearby quarries whence came the rough coral, cut and carved on the spot, for the palace walls. Little steel was used in construction.

Agents bought roofs of whole Cuban villages, replacing them with modern materials, to obtain the weathered, hand-shaped old tiles for the palazzo roofs (page 548).

Treasures from Historic Palaces

The architect, F. Burrall Hoffman, Jr., and Paul Chalfin, designed the building to accommodate the remarkable collection of antique doorways, wall panels, and ceilings removed from Venetian, Roman, and Milanese palaces.

Mr. Deering leased large warehouses in which he and the architects over and over again, experimentally laid out and furnished room after room. The height of the second floor was determined by the size of a tall entranceway, with marble frame and wrought-iron gates, connecting the palazzo terrace and the patio. This gateway came from the palace built for Niccolò Tiepolo and his son, Vettor, daring Venetian admirals of the 14th century when Venice was a great sea power.

Vizcaya's formal Italian gardens were planned to rival in detail and originality the landscape masterpieces of the Villa Aldobrandini in Rome or the Villa d'Este in Tivoli.

How much did Vizcaya and its furnishings cost? Many estimates of the number of millions of dollars spent on the place have been made, but all have been pure guesses. Mr. Deering, who died a bachelor, never let it be known. What he was interested in was quality and artistic perfection.

No matter what the cost, Vizcaya could not be reproduced today. No longer is it permissible to remove art treasures permanently from European countries.

Spanish in Name, Italian in Spirit

Although Vizcaya is Italian in spirit, the name is Spanish, after the same province of Biscay from which Biscayne Bay takes its name. The letters B and V are virtually interchangeable in the Spanish alphabet.

The crest above the huge entrance to the grounds on South Miami Avenue is a model of the caravel *Vizcaya*, one of many successive royal Spanish ships to bear that name.

When Justin Locke, National Geographic staff photographer, and I visited Vizcaya, the National Geographic Society had been graciously accorded permission to make, for the first time, color photographs of the palazzo.

From the entrance we drove beneath overhanging tropical trees for several hundred feet. Then we turned into another tree-arched driveway and came to the oval-shaped forecourt, passing large Venetian vase forms at its entrance. On our right a superb 17th-century gateway of carved pink marble and Istrian stone, framed in coral, led to an adjacent court. This gateway came from the Palazzo Bevilacqua in Verona, built by Michele Sanmichele, 16th-century Italian architect.

Stepping through the wrought-iron entrance to the palace, we faced a fountain group made up of a Roman bath of yellow marble, surmounted by a 17th-century Italian statue of Bacchus, god of wine, and flanked by carved infants astride sea monsters.

Presence of the ancient Roman bath is not incongruous. Pompeii and Herculaneum, [illegible] buried in lava during an eruption of Vesuvius in A.D. 79, were excavated 17 centuries later. The ancient art thus revealed

gave a compelling impetus to revival in Italy of classic Greek and Roman design, totally forgotten during the Dark Ages.

The tall, graceful doors at either end of the loggia once stood in the vestibule of the Hôtel Beauharnais in Paris. This was the palace occupied by Napoleon's stepson Eugène, son of Josephine and a Martinique planter.

Through the doorway on our left we passed into the entrance hall. Its outstanding feature is its hand-colored wood-block wallpapers made by Joseph Dufour of Paris about 1814.

Galerie Mythologique is the title of the set, printed in shades of gray, with 24 strips depicting the Vengeance of Ceres, Phaëthon and Apollo, Venus and Diana, the Judgment of Paris, Time and the Seasons, and the Muses. It is the only known Dufour set of this pattern in America.

The library, or Adam room, shows the classic design in furniture developed by the Adam brothers of England. The brothers traveled widely in Italy during the classic revival, and it made a profound effect upon them. This is reflected particularly in a fine Corinthian mantel, over which an ancient Roman mosaic has been set into the wall.

A rare set of chairs in this room once belonged to Pauline, sister of Napoleon, who wed the Roman prince Camillo Borghese in 1803 and promptly refurnished his 200-year-old palace in the classic style.

18th-century Salon

The style of Vizcaya's 18th-century salon is Louis XV, particularly as it was developed in Italy (page 601). The size of the room was determined by the plaster ceiling, which once graced the Palazzo Rossi in Venice.

French design then was making its impact on Italian style, and vice versa. These decorative styles reflect the trend from the era of dignified, courtly Louis XIV, builder of Versailles, to the lovely but artificial and frivolous designs which developed under his great-grandson, Louis XV, and flourished to a lesser extent under Louis XVI and Marie Antoinette.

Rococo comes from [illegible] *rocaille*, or "rockwork" [illegible] a lavish mixture of [illegible], pierced shellwork, scrolls, and foliage.

We found a continuation of rococo in the music room. Ornate ceiling and paneled, painted canvas walls came out of a Milanese palace. The lavishly decorated spinet was built in 1645 by Horatius Albana; the gilded zither is a century later; the harp is carved and decorated in floral style.

Two magnificent stone turn time back to the period of the Italian Renaissance.

Once, the great Renaissance hall, we entered by a small doorway, easy to defend, for in the 16th century large houses still were built somewhat in the manner of fortresses. One end of the hall is taken up by a huge stone chimney piece, a notable example of French Renaissance sculpture (page 603).

Most notable of the wall hangings is an Italian tapestry, woven about 1550 for Duke Ercole II of Ferrara, depicting Hercules killing the Nemean lion. Was the weaver flattering the Duke? Ercole is Italian for "Hercules."

A massive 15th-century Italian sideboard in the other Renaissance room, the banquet hall, once held church vestments (page 599).

The handsome 15th-century Italian chimney piece is carved of dark sandstone from hills near Florence, in the style of sculptures in the court of Lorenzo de' Medici.

The east loggia is distinguished for its large cedar doors, encrusted with bronze [illegible] and installed in marble frames. Doors and frames came from an old palace in Rome which was acquired by the Torlonias, great Roman banking family.

The intricate wrought-iron chandelier of the upstairs dining room was removed from an Italian palace. The wall murals are by Claude Joseph Vernet, French painter of marine scenes for Louis XV. A mantel is decorated in lacquer in the Chinese manner (page 600).

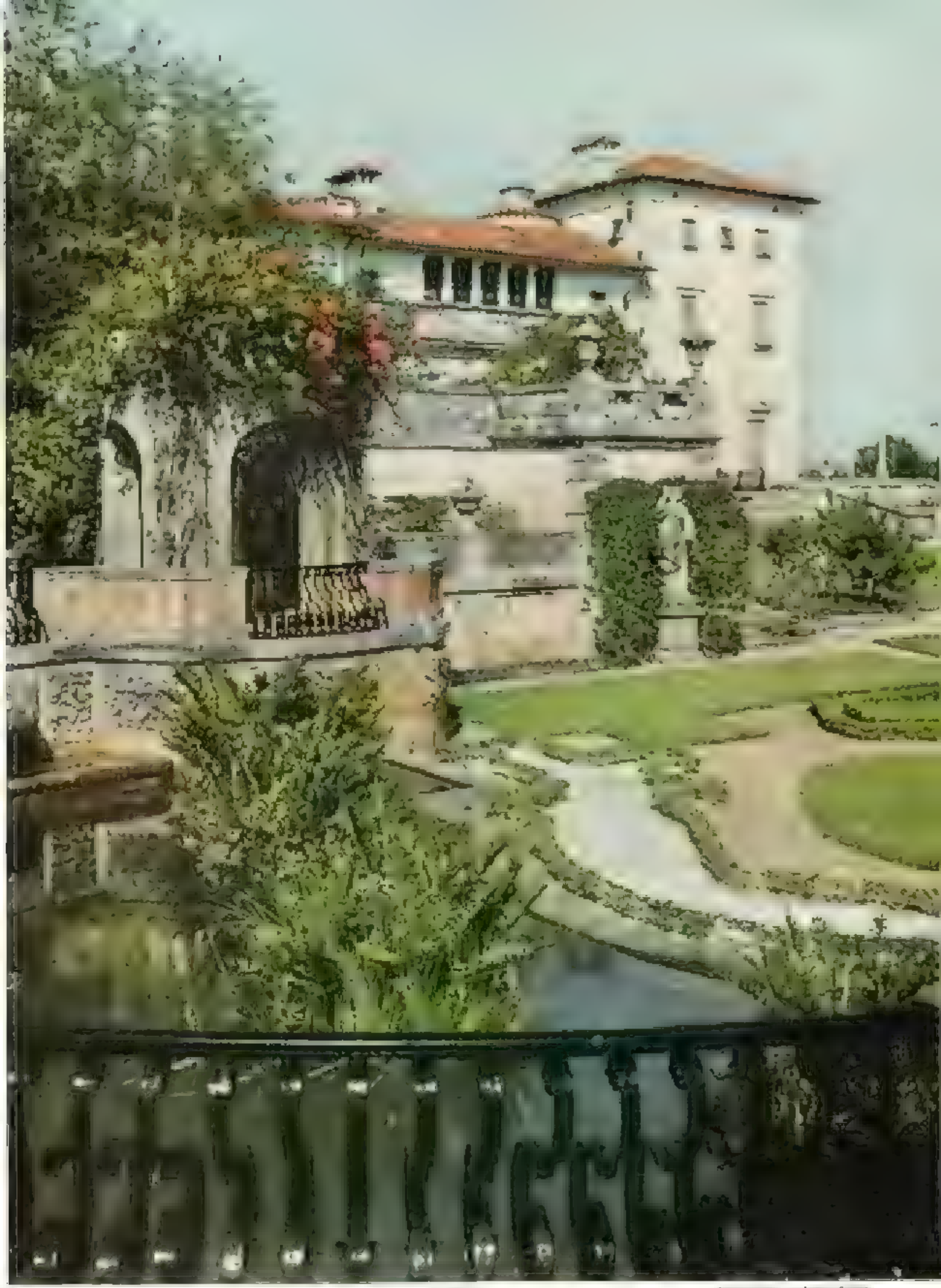
Vizcaya's gardens, in formal Italian treatment, are unsurpassed in America (pages 597, 602, and 604). With the palazzo at one end and a small casino upon a mound at the other, they are conceived as a vast room walled in with formal vegetation and forests.

The floor of this garden room is an ornamental and diversified arrangement of levels and plots, with trimmed borders and pleasant paths, flanked by statues and fountains. No tropic vegetation out of keeping with Italian gardens has been permitted to intrude.

Strolling through the gardens, we came at length to the sea wall. We looked out upon a huge stone barge breakwater, embellished with statues and pillars (page 598). All the sculpture on the barge was designed by A. Stirling Calder, eminent American sculptor.

As in the palazzo itself and as in the formal gardens, the barge carries out in conspicuous detail Mr. Deering's aim to re-create faithfully on American soil an Italian palazzo.

The citizens of Miami and all southern Florida have good reason indeed to be proud of majestic and artistic Vizcaya.



Vizcaya Reflects the Grandeur of an Italian Palazzo in a Miami Setting

Soldiers on Nigeria's Shore Barge Reconnoiter Guard the Entrances to Its Private Harbor

Banquet Hall Tapestries Once Hung on the Walls of Robert Browning's Villa in Asolo, Italy

[illegible]

National Geographic Society [illegible]

European Artists Copy Oriental Style in Statue and Lacquered Wood Carving

The terra-cotta figure is early 18th-century French; the overmantel decoration English. They are part of the furnishings of the seventeenth-century [illegible] room of [illegible]. Brackets over the mantel hold Kang-hsi porcelains.

Treasures from Italian Palaces Furnish Vogue's Bibliography Series

[illegible]

Clipped Hedges, Statues, Vases, Fountains and Terraces Combine to Create a Formal Italian Garden at Vizcaya

From a French Chateau of Catherine de Medicis Center: An Gothic Piece of the Renaissance Period

Stone Walk and Venetian Bridge Jut Out from Sea Wall in a Grecian Teahouse

Stone walk and Venetian bridge jut out from sea wall in a Grecian teahouse. A stone walk and Venetian bridge jut out from the sea wall in a Grecian teahouse. [illegible]

An Ancient Roman Sarcophagus Serves as a Garden Fountain Basin

Roman sarcophagus serves as a garden fountain basin. An ancient Roman sarcophagus serves as a garden fountain basin. [illegible]

Baltic Cruise of the *Caribbee*

By Carleton Mitchell

WHEN a pleasant dream comes true, [illegible]

No sooner had my wife Zib and I returned to Annapolis after cruising the islands of the Caribbean * than we began to dream about the skerries (little islands) of the Baltic.

"It's cold up there," warned one friend.

"Pilotage is difficult," said another.

"There are unswept mines," contributed a third.

"The Cold War will engulf you," added a chorus.

But the idea persisted. We thought of the archipelago around Stockholm, hundreds of little islands flowering in the brief summer; of isolated Finland and its courageous capital, Helsinki; and the storied walls and battlements of Sweden's ancient Visby and Kalmar.

True, the Iron Curtain had already closed off one shore of the Baltic; newspapers carried headlines that showed hazards were not all navigational. And we could learn of no other American cruising yacht that had ventured into the Gulf of Finland since the war.

Cruise Begins at Oslo

However, on the afternoon of July 12, 1949, the United States ensign flew jauntily from the sterns of two yachts lying off the Royal Norwegian Yacht Club, Oslo. On one mooring was our *Caribbee*, on another *Argyll*, owned by William F. Moore of Oyster Bay, New York, our cruising companion for the summer. Both were ocean racing yawls, fast, able and comfortable.

That morning the yachts had gone overboard into the waters of Oslo Harbor from the foredeck of the S. S. *Monarch* (page 615). Mast and rigging were in place, the stains of shipping from New York removed.

We had chosen Oslo for the start of the cruise so that we could sail down its beautiful fjord and cross Sweden by the famous Göta Canal. I had always wanted to see rural Sweden from my own deck and sail its lakes in the mountains (map, page 608).

It had been ten years since Zib and I visited Oslo. Our last memory was of Karl Johans Gate, the principal avenue, thronged with silent crowds while sirens howled the first practice blackout. Since then Norwegians have weathered war and occupation. Yet we found their lovely capital little changed. Shops were well stocked, restaurants crowded †.

Every weekday evening steamers carrying commuters to their homes on Oslo Fjord race dramatically for the harbor narrows (page 625). We dropped our lines and followed the fleet. [illegible] the sky was cloudless, of the depthless blue found only in high latitudes. Oslo was red and white against a background of pine-covered green slopes.

About 15 miles below Oslo, where the fjord narrows, we passed the small island of Kaholm. Soldiers inspected us from lookout towers. Hidden in the rocks were bunkers narrow eye slits barely visible.

Where Nazis Got a Surprise

These were the guns that upset the time schedule of the Nazi invasion of Norway. When the cruiser *Blücher* came abeam, the fortress opened up. Surprised Nazi generals dressed in dress uniforms donned for the grand entry into Norway's capital.

A few miles further we saw a rusting monument to the Norwegian underground movement: the German freighter *Donau* lying at a steep angle on the shore. While this troop transport lay at Oslo, the resistance hero, Max Manus, worked for three days under the dock among rats and filth attaching homemade Limpet mines to her hull.

When she was well down the fjord, the mines blew holes in her bottom, and her commander drove her on the rocks full speed. However, all those in the afterpart of the ship, including many Nazi soldiers going home on leave, were lost.

Last night we anchored behind Hankøy, a center of Norwegian yachting. The Crown Prince has a house perched on a hill overlooking the harbor. He is an ardent racing sailor.

Beyond Hankøy (literally "Hank Island," as the terminal ø by means "island"—Oslo Fjord widened into a huge bay. Just after lunch, at 1:02 Saturday, July 16, I took bearings and found we had crossed a watery border and entered Sweden.

For the night we stopped at the fishing village of Havstensund. As we sat in the cockpit talking over our navigational problems

* See "Cuba Cruises the West Indies," by Carleton Mitchell, National Geographic Magazine, January 1946.

† See in The National Geographic Magazine: "Mobilmen's Cruise," by Mitchell [illegible] Aston and Alexander G. B. [illegible] "Norway Cracks Her Mountain Shell," by Sydney Clark, August, 1948; "White War in Norway," by Thomas M. Hepp, November, 1945; "Norway, an Arctic Ally," by Wilhelm Morgenstierne, March, 1943; and "Norway, A Land of Stern Reality," by Alvert Prince Dennis, July, 1940.

Cranes Bristle Like Oil Derricks above Göteborg, Sweden's Atlantic Gateway

[illegible]

[illegible] strolled off. During the rest of the cruise [illegible] were dumped in [illegible]

Swedes Crave the Sun

[illegible]

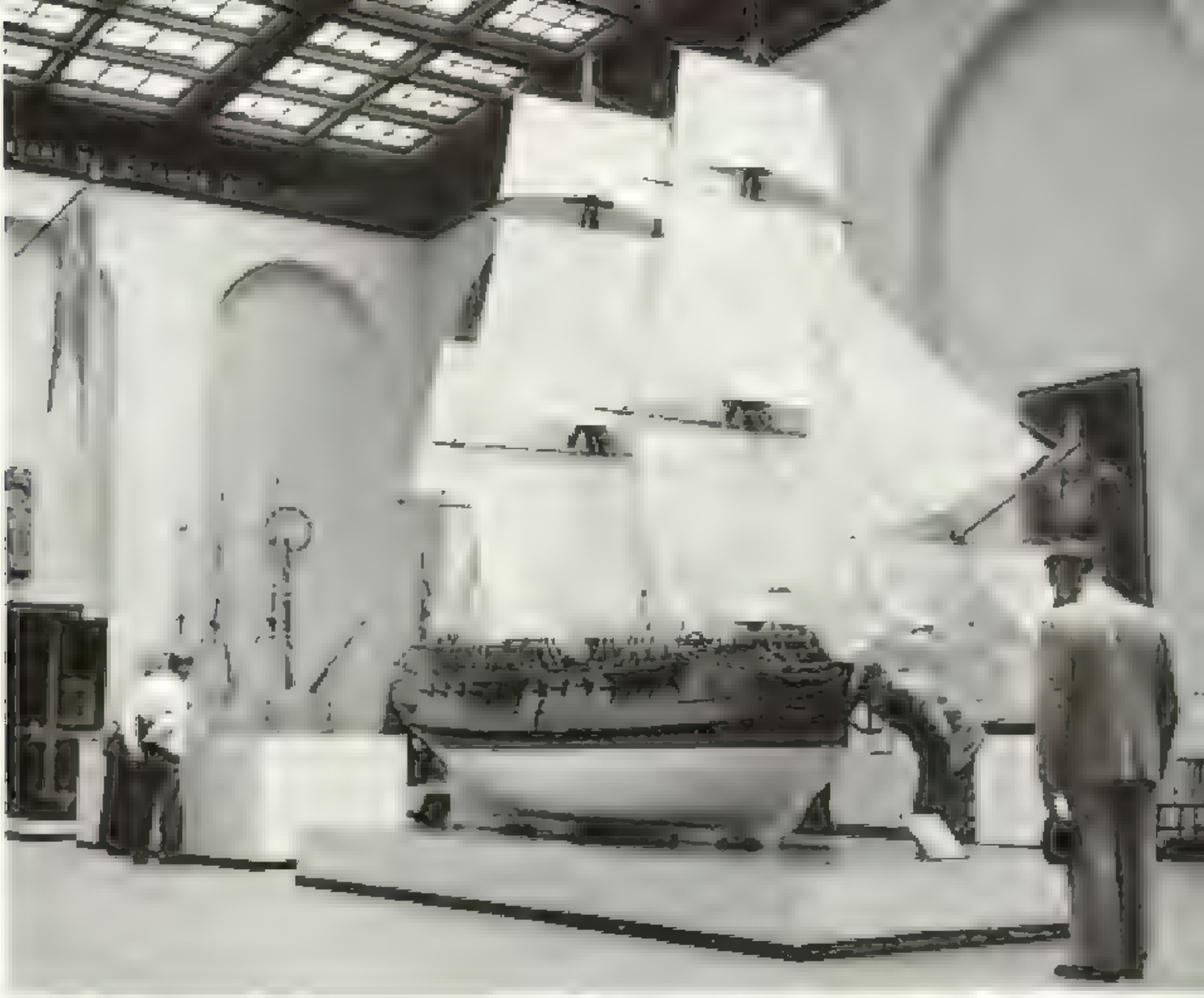
I [illegible] these cold waters. [illegible] I took my first plunge over the [illegible]. The water temperature was a comfortable 70° Fahrenheit. Afterwards I swam [illegible] in the Gulf of Finland.

[illegible] across the Atlantic to the west coast of Norway [illegible]. This [illegible] and northern [illegible].

Our [illegible] of the Vikings, those [illegible] islands of the Atlantic. [illegible] everywhere. [illegible] a local vessel here.

But the Vikings were not often pursued. They controlled the northern seas. These [illegible] with pleasure and [illegible].

As we raced [illegible] Marstrand, we [illegible] of the Vikings [illegible] that [illegible] these waters a thousand years ago. [illegible] craft they [illegible]



Sails Limp, a Model Ship Stands Becalmed on a Glassy Sea in Göteborg's Marine Museum

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Göteborg, Sweden's Atlantic Outlet

[illegible]

[illegible]

The Iron Curtain's Shadow Falls Across the Baltic, Gateway to Northern Europe

[illegible]

Out of Göteborg's crowded harbor we motored, bound up the Göta River, the first section of the canal. This unique waterway, [illegible] proposed as early as the 16th century, work really began in 1832 [illegible] In the 1[illegible] direct [illegible] exit to the Baltic at Öre Sund, Swedish commerce would be trapped.

Soon *Gunilbre* and *Ingvill* were motoring through a placid countryside. Fat cows grazing on lush green fields looked up [illegible] as the trim vessels with flags waving gaily chugged past. Pine farmhouses with big barns appeared on both banks. It reminded us of Wisconsin.

Suddenly, an imposing ruin shattered the illusion. It was Lecbus Castle, a token of the centuries when the Göta marked the frontier between Norway and Sweden (page 616).

[illegible]

[illegible] King of [illegible] named Gyd[illegible] [illegible] only [illegible]

[illegible] set out to conquer the other [illegible] knowing he would not cut his life unto [illegible]

[illegible] Arizona, July, 1954

Caribbean Anchors Off Helsinki, Where the Americans Received a Rousing Welcome

Finland's sea-warmed capital [illegible] degrees south of the Arctic Circle [illegible] It shows [illegible] position close to the 60th [illegible] and northern Lapland [illegible] its neighbor, Leningrad [illegible] The skyline's great [illegible] Great Church, [illegible] a bread, and an apartment [illegible]

[illegible] Hair thick and flowing locks be-[illegible]

[illegible] he won the Battle of Hafsfjord [illegible] Stavanger, crushing all resistance and uniting Norway. He married Gyda, but they did not live happily ever after. He married [illegible] and they had several wives, ruled for 60 years, and founded a line of kings that lasted four centuries.

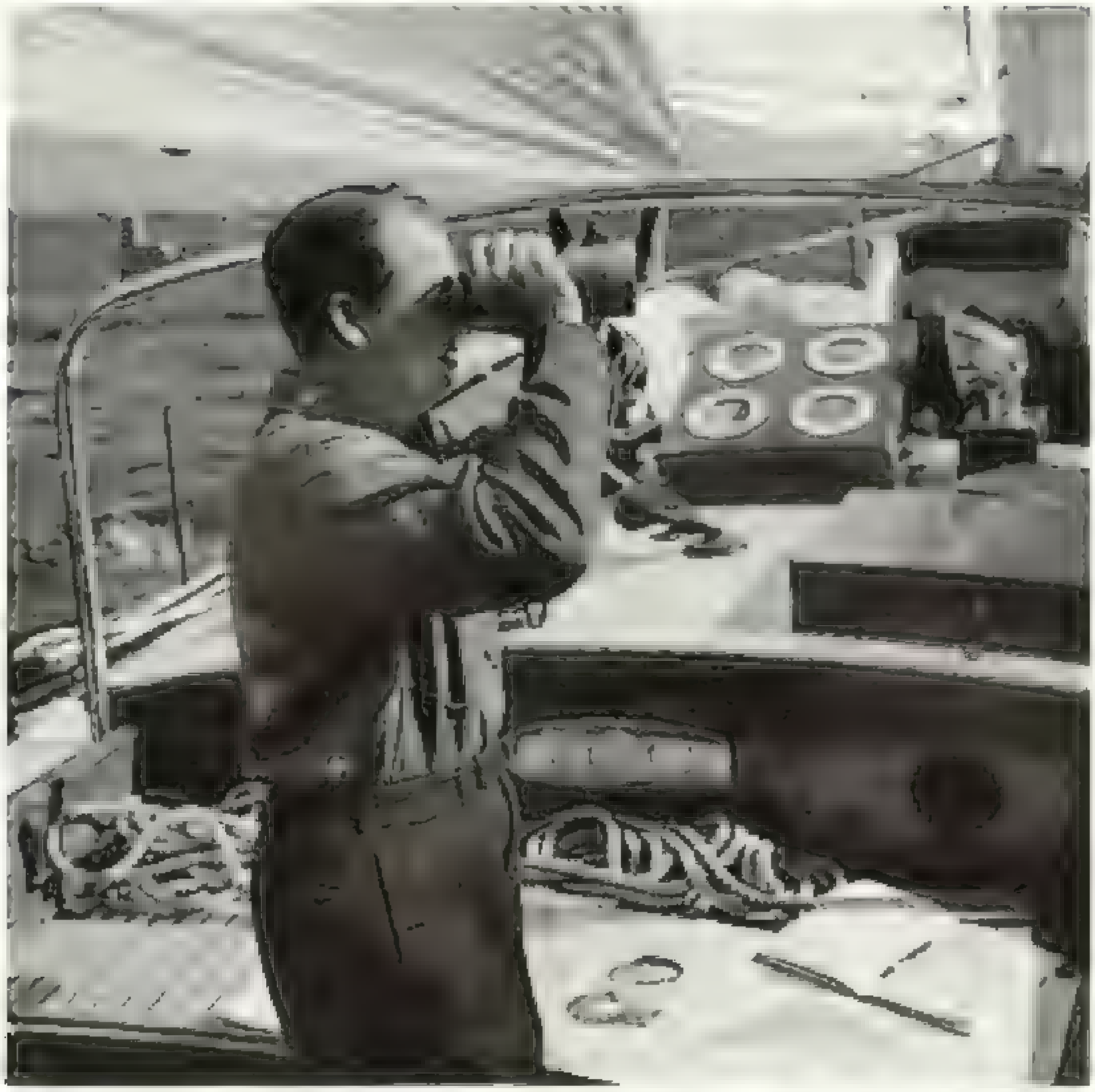
Göta's Locks, a Giant's Staircase

In the afternoon we reached the foothills and our first locks. Ahead, we stared at a giant's staircase, a series of locks stepping up the hillside. These water elevators by-passed waterfalls, which provide power for much of southern Sweden.

[illegible] canal is divided into three [illegible] the first a deep section for ocean-going ships, from Göteborg to Lake Vänern; the second, a series of connecting [illegible] and the third, a thin waterway from [illegible] to the Baltic. The total [illegible] approximately 240 miles, of which 59 were dug by man. There are 64 locks in all.

By dusk we had climbed the water [illegible] and anchored in Lake Vänern. While the [illegible] swam, Zib put the final touches on a *smörgåsbord* she had spent the afternoon preparing.

She was worried whether her efforts with local dishes would win approval of Swedish friends in our crew. There [illegible] herring with dill, herring with sour cream and chives [illegible] herring with onions; sardines, anchovies [illegible] shrimp to be eaten shells and all [illegible] salmon, smoked reindeer, smoked [illegible] radishes, sliced tomatoes, fresh [illegible]



[illegible]

Binoculars to Eyes, the Author Pilots *Caribbee* Through Finland's Baltic Waters

[illegible]

[illegible]

[illegible]

By Boat Across Sweden's Heart

At last [illegible]

[illegible] Sweden.

When [illegible] we entered the old [illegible]

[illegible]

[illegible]

A Vacationing Swedish Family Sails Through Göta Canal on a Folkboat

[illegible]

[illegible] attained our greatest altitude, 275 [illegible] above sea level. [illegible] square dis[illegible] mountain spring, famous [illegible] and Lake Roxen. To reach the [illegible] we had to descend the 15 locks of Berg, the [illegible]

Our Last Lock—Lake Ahead!

From the highest lock [illegible] almost vertical. Far below we saw blue water and dwarfed sails. I wondered what would happen if a gate failed, letting the waters pouring down.

The shore stood a monument to the [illegible]

Swedish soldiers who had helped build the canal. But to me their memorial was the canal itself, still of service to Sweden.

Beyond, at Mem, we passed through the final lock, suddenly I realized that the water under us was from the Baltic. Another dream had come true.

But our proper introduction to the Baltic really came a few miles beyond. The canal had opened into the wooded bay of Slutsken; in turn, this narrowed, and on a low point stood a gray stone tower.

Sten Schaeffer, a Swedish friend who was sailing beside me in the cockpit, told its story:

"That is Stegeborg. In 1200 it must have looked just like that, but later a whole castle was built around the original tower. Kings lived there for centuries. Then after Karl X died in 1660, it was eventually abandoned.

"When a new Royal Palace was constructed in Stockholm, Stegeborg Castle was torn down, stone by stone, and shipped to Stockholm. But the workmen found the old tower too solid to break up. So the first part of Stegeborg is also the last."

We sailed through the narrows, *Argyll* heeling, and anchored for the night at Arkosund. We were in the Baltic skerries of Sweden.

Imagine thousands of islands of all shapes and sizes, scattered at random across sparkling blue water, with deep channels between and quaint harbors behind each headland. Picture pine trees coming down to the shore, sparkling brown rocks, and white sails against a blue sky. Those are the skerries, spread like pebbles on a beach along Sweden's shores and Finland's south coast.

We boated through these islets with warm fair breezes, guided by perfect charts and a profusion of navigational aids. A friend aptly described this sailing in the skerries as "walking in the garden."

Here we had no long passages or heavy seas, no worries over savage squalls. This is to ocean cruising what roaming in a cottage garden is to climbing Mount Everest—a sailor's Garden of Eden.

However, we wanted to have a look at the open Baltic, so we laid a course for Hävringe lightship and then the peninsula of Landsort [illegible]

Russian Patrol Craft Close By

As we sailed along rolling slightly to a small beam sea, the Swedish radio added a disconcerting note. A broadcast reported that, a few days before, Russian warships were maneuvering between Öland and Landsort, almost where we were. It also relayed a warning by the Finnish Government to stay well clear of the Russian zone of Porkkala in the Gulf of Finland. Five small sailing yachts, blundering inside the buoys, had recently disappeared.

As in the Bahamas, so far to the south and west, there was virtually no compass variation. We were almost exactly on one of those isogonic lines where the needle of the compass points toward true north, or the North Pole.

However, we were not without some uncertainty, as the chart indicated numerous circles of local magnetic disturbance. One, not far from our path, showed a possible error of plus or minus 60 degrees, probably caused by an enormous deposit of iron ore.

Argyll and *Caribbee* parted company at Landsort. Bill Moore continued outside, while we continued our walk in the garden and approached Stockholm by way of Lake Mälaren. It was worth the detour.

Old Stockholm—"City within Bridges"

Our first impression of the Swedish capital was from the lake in front of Stockholm's Town Hall, called by some "the most beautiful building since the Renaissance." From our deck it was breath taking. The three golden crowns of Sweden soar into the sky above its soft red brick (page 631).*

Stockholm is a city worthy of its Town Hall. Much is extremely modern architecturally, yet there is an Old Town, one of the most perfect examples of medieval Europe in existence (page 630). As the original Stockholm sprawls across an island, it is called the "City within the Bridges." The old heart is surrounded by a new body.

I have never met a returned traveler who did not like Stockholm. Its location is superb, rising above a pattern of sparkling waterways. These, with parks and wide streets, give it an air of spaciousness and livability.

Its people are courteous and hospitable. Theirs is a gracious civilization. Eating is a ritual. Tables groan with the assorted delicacies of the *smörgåsbord*, the "bread and butter table." Nothing could be a greater understatement! (Page 609.)

When fresh-water crawfish *kräftor*, come into season, the city—and all of Sweden, for that matter—goes on a crawfish spree. Every restaurant blossoms with *kräftor* tablecloths, lamps, and kindred decorations.

Stockholm is also a city of museums, castles, and churches. High above the city lies Skansen Park, where houses of every period of

* See "Granite City of the North," by Ralph A. [illegible] 1958.

Argeß, Breaking Post Soviet Shortcuts Overtakes Corridor, Her Baltic Cruise Companion

[illegible]

Cordelia Rides a Daylight Across the Atlantic . . . Swedish Children Toss Bread to Fish-scavenging Gulls at Mars—and

Bolnes Castle, a Reified-in Ruin, Once So Dominated Its Countryside that It Gave Its Name to a Province. Sweden's Dalarnian

Gustavus, a Model of Medieval Copenhagen, Rises in Göteborg as a Danish Gift to the Swedish People

Sails Parked, Cyclists Leave Traffic at a Göta Canal Lock. Touring Rural Sweden, They Brushed Past Grazing Cows

[illegible]

Swedes, on Foot and on Cycle, Gathered at Every Inch to Watch the American Troops Pass Through

Gunwale to Gunwale, Fender to Fender, the Vessels Drop Down Into Locks from Lake Huron

Swedish history have been brought, rebuilt, and refurnished. Visitors literally walk back through the centuries.

Some churches recapture the past, too, especially Riddarholm, the Westminster Abbey of Sweden. Here the kings and the great lie under banners and in magnificent tombs.

Unfortunately, our luck with the weather ran out on our arrival. The rains came down in limitless quantities, so we moored *Caribbee* and moved to a hotel. A local paper cartoned a sports event in the stadium—gymnasts performing in deep-sea diving suits!

Then came a change for the better. All the way from Oslo we had had sunshine but little wind. Now our luck became even better; we still enjoyed the sun, and strong [illegible] breezes as well. No sooner had *Caribbee* cleared the mooring basin than the overcast melted away; so we hoisted working sails and tore through the passages at maximum speed.

Swedish people take advantage of Nature's blessing. Nowhere are there more little boats. As we came through the narrows at Sandhamn, we saw hundreds of boats lying in front of the Royal Swedish Sailing Club. We had arrived for Sandhamn Regatta Week, one of the biggest yachting events of Europe. It was the one date that Bill Moore and I had plotted our summer cruise around (page 632).

Thus began a memorable few days. Our welcome was swift and complete. We had hardly anchored before a representative of Commodore Jacob Wallenberg brought out an invitation to dinner. Each night there was another dinner, and formal dances inside the clubhouses or folk dances on the lawn.

Swedish Families Summer Afloat

To the Swedes any boat is a cruiser; whole families spend the warm months on craft the size of our smaller racing classes. Sailors pick a likely spot and tie up to shore, build a cooking fire on the rocks, eat picnic style, and sleep in the cockpit under a canvas tent. At Sandhamn several hundred were doing just this and racing each day besides (pages 631, 633, and 634).

To join in the racing, Bill chartered a sloop of the international 6-meter class. Zab and I took a sailor's holiday and crewed in races against boats from Sweden, Norway, Finland, and Great Britain.

On the final day *Caribbee* hoisted sail for the resort of Saltsjöbaden, another yachting center. From the walks around a large hotel people watched our approach. It was a moment for stylish seamanship.

A mooring off a large waterfront boarding bay empty. I carefully planned my approach: douse forestaysail and mizzen, a quick turn into the wind, then mainsail down, mooring picked up. Simple! Except, when I spun the wheel, I happened to look up. It was the ladies' bathhouse, one of those hazards to navigation. *Caribbee* missed the mooring by a boat length.

Here began the finest sailing I have ever known. Both *Legall* and *Caribbee* got under way with the first glow in the sky. It was calm. Soon a breeze came in fresh and true from the southwest. We set every light sail that would draw. We boomed through the skerries, sunlight dancing on the water, the islands like green jewels in a silver setting.

Even one who loves the Tropics must concede there is nothing so fine as a spell of good weather in high latitudes. The air is crisp, and warm in the sun, cool in the shade. By day the sky is deep blue, by night the stars are dazzling. Thus we sailed the skerries of Sweden and Finland.

Baltic Water Nearly Fresh; No Tides

The Baltic has a special charm. It is called a sea, but is more like a lake, as indeed it was during one geologic period. Connected with the Atlantic only by straits between Sweden and Denmark, yet fed by the heavy rain and snowfalls of the northern forests, the water is virtually fresh. There is almost no tidal rise and fall, so few strong currents.

During the summer the sea is usually placid, but winter gales make it one of the most dangerous bodies of water on the globe.

At Söderarm Light we suddenly popped out of the skerries into the Åland Sea, a small segment of the Baltic. We set a compass course. The spinnaker pulled hard. The coast of Sweden began to dim, that of Finland to rise.

It was a crossroads old in history. Here sailed the Goths, that restless and aggressive people who overran much of Europe and helped to destroy the Roman Empire. Here cruised the boats of the eastern Vikings. Here cruised the fleets of Peter the Great.

Rapidly we raised the shores of Åland Island. As we neared its principal port, Mariehamn, the spars of a square-rigged ship towered above the trees. I should have been disappointed had it not been so, for this tiny and remote spot was the last home of the big sailing ships.*

*See, in the National Geographic [illegible] "Last of the Cape Horners," May, 1[illegible]; "Last Sailing Ship Survives (Åland Islands)" [illegible] 1935; "Cape Horn Grain-Ship Race," January, [illegible] all by Alan J. Villiers.

Copenhagen Harbor Scenes with Freighters, Passenger Ships, Fishing Craft, and Old Sailing Ships (Right)

Barges, Dockhands and Working Crews: Oslo's Waterfront

[illegible]

The Ålanders Helped Themselves to Free Wood. It Drove Their Ships and Greenhouses

[illegible]

[illegible] Erikson refitted [illegible] waters of the [illegible] be famous [illegible] British Isles [illegible] Edgar Erikson, pres[illegible] picturesque but inefficient [illegible]

[illegible] hundred [illegible] Young men no longer [illegible] as apprentices.

[illegible] will be [illegible] as a museum [illegible] Erikson and his [illegible]

As we [illegible] in the shadow of [illegible] Eike Kronqvist called "Tervetuloa Suomeen" (Welcome to Finland).

On Åland we hired an automobile and drove through [illegible] Near [illegible] turned the [illegible] We shivered [illegible] the [illegible] of the winter [illegible] of the [illegible] neighbor country: "The [illegible] They [illegible]

Despite a series of wars [illegible] of their towns and [illegible] the loss of territory [illegible] the Russians [illegible] the Finns are [illegible] and move forward as a [illegible] independent nation."

Skerries Like Spilled Pepper on Chart

[illegible] Åland [illegible] way [illegible] through [illegible] streets [illegible] like [illegible] spilled pepper [illegible] cloth. [illegible]

reduced gradually to scenery pictures. We could take advantage of ideal sailing conditions.

The water was smooth in the archipelago, and both boats carried every sail that could be hung from their masts. At one narrow spot a small boy called in Swedish from the shore, "Do you go with a motor?" Our tall masts were catching breezes not apparent below, and the boy could not understand our speed.

Finnish skerries differ from those of eastern Sweden; they are of reddish-brown rock, worn smooth by ice and winter gales. Small ones look like whales sunning on the surface. Those nearest the Gulf of Finland are barren, but along the inner fairways most are heavily wooded.

We anchored each night. One stop was at Keisar Hamppu, Tsar Harbor, a strong cove between two islands. It had been a favorite of Alexander II, Tsar of Russia and Grand Duke of Finland.

Once he asked an old woman named Stina if she had fish to sell; she handed him the rope to her fish float which she tipped beside. The attendants were horrified: tsars weren't given lines to tend! But this Tsar was amused. The old lady became famous as Keisar Stina, and the royal yacht bought fish from no one else.

Hangö, Western Outpost of Asia

At the southwestern tip of the Finnish mainland lies the port of Hangö. It was held by the Russians during 1940 and 1941, following the first "Winter War," when Finland defended herself with such surprising success. Hangö might be called the western outpost of Asia; beyond it the huge mass of Russia stretches off to the Pacific.

Buildings were gutted and pocked by shrapnel and bullet. Reconstruction was going on. A new town hall was rising on the foundations of the old, destroyed by fighting.

On the waterfront we were shown a monument to German soldiers who landed there in 1918 to help the Finns drive Red troops from Helsinki. After the Russians got Hangö in 1940 they removed the monument; when the Finns returned in 1941, they restored it. But in the Moscow agreement of 1944, when Porkkala was leased to Russia for 50 years, the monument was removed again.

Heavy ice closes the Gulf of Finland to steamers. Traffic bound for Helsinki formerly used the skerry channels, kept clear by icebreakers. But the Russians closed these protected fairways so now steamers must use the inferior port and facilities of Hangö during the winter.

On the third afternoon beyond Hangö, a Finnish friend piloted us to a lovely island where his family has a summer home. After we had safely moored *Carribee* and *Argyll*, he introduced us to a Finnish bath.

Stones had been heated in a closed room and water poured on to create steam. We lay on raised wooden benches. Within minutes perspiration gushed from every pore. We slapped each other with birch boughs dipped in water and momentarily laid on the stones.

Afterwards we lathered with soap, then swam.

During the winter Finns end up by rolling in snow or taking a plunge through holes chipped in the ice, but it was cold enough for me right then!

That night we ate huge platters of *kräftor* and sang the Swedish songs we had learned. But none of us could quite forget being in the shadow of the Kremlin. Just six miles to the east lay the forbidden zone of Porkkala, 150 square miles in area and extending well offshore. No one knows what is happening inside.

Skirting Finland Through a Fold in the Iron Curtain

Here, as elsewhere, the Iron Curtain is impenetrable. Finnish trains pass through with their shades tightly closed, drawn by a Russian engine. Boats are not allowed to go through the island passages. Frequently Finns living near by hear sounds of blasting, indicating that the area has been heavily fortified.

On the other side of the Gulf of Finland, little more than 20 miles away, the Estonian island of Naissar has also been fortified. Thus Russian guns command all ships moving in or out of the Gulf of Finland. Peter the Great is supposed to have conceived this plan to "put a cork in the bottle."

So when we left the next morning for the final run to Helsinki, we sailed through this fold in the Iron Curtain. We felt unfriendly eyes following our boats with binoculars and radar screens.

To prevent craft straying within the Porkkala zone, the Finns maintain a wide semicircle of floating buoys. When we picked up the first, we could make out details of the shore beyond and see high towers. Simultaneously, we made out a vessel coming toward us. At first she was just a speck, but as we watched through binoculars she grew rapidly. It was a moment of apprehension.

Carribee happened to be in the lead. We

hoisted our American ensign. We could see no flag on the stranger, but she was obviously a naval patrol craft.

When about 200 yards away she made a sudden turn to parallel our course. At her stern snapped the Finnish colors. They looked very good to us.

We dipped our ensign and she returned the salute, her crew standing rigidly at attention despite a heavy roll.

If any Russians watched, we gave them a good show, for both yachts were carrying full-foot jibs and mizzen staysails while the wind piped fresh (page 670). Our two-foot ocean race carried us well out into the Gulf, within sight of Naissar. For a while, as the log put it, "only Russia was in sight."

Then the Helsinki Lightship appeared over the horizon. We had run the Soviet gauntlet. When we picked up a mooring off the yacht club, we were six degrees from the Arctic Circle and less than 200 miles from Leningrad.

Helsinki Recovering from War

We lay in the center of Helsinki. From our decks we could see the market place and the Government buildings and passing traffic (pages 680, 681).

Helsinki struck us as typical of the nation.* Many buildings, even the President's Mansion, lacked paint; this was not a sign of neglect but of honor. Finns are paying off their debts, reconstructing necessary buildings. Fresh "make-up" can come later. Some travelers had found Helsinki depressing. To me it was just the opposite.

Bill Moore had visited Helsinki two years before. State shelves were bare and restaurant fare limited. Now stores had a good stock and food was plentiful. Possibly no other war-torn country in Europe has shown a more remarkable recovery, and without substantial outside aid.

Everywhere on the cruise we were well received. People in Norway and Sweden seemed genuinely pleased to see the American flag floating from the sterns of two yachts. Crowds gathered whenever we docked. Passing boats would wave and salute. But in Helsinki our welcome was complete. Finnish hospitality was boundless.

Finns Hope for Olympics in 1952

Finland is scheduled to be host to the Olympic Games in 1952. Preparations were going forward for the reception of athletes and visitors. The stadium and hotel under construction symbolized to us Finnish courage and determination.

Once before, in 1940, the Finns had prepared for the Olympics. Then the games were canceled because of the attack by Russia in November, 1939.

My only complaint about Finland stemmed from my usual difficulty with language. Here I had to struggle with not one tongue but two, as every sign, every map, every street name, appeared in both Finnish and Swedish. Even *Helsinki*, *Suomi*, becomes *Helsingfors*, *Finland*, in the Swedish tongue. This is a heritage from the long Swedish rule and the hundreds of Swedish families who remain as part of the nation.

There was another rainy spell while we were in Helsinki. With the wind seemingly fixed in the southwest, "on the nose" going back, we expected a hard thrash out of the Gulf of Finland and down the Baltic. But the day before we left skies cleared and the wind shifted.

"A dry easterly!" exclaimed Finnish friends. "You have luck!" Fair winds from Sweden to Finland, now the wind was to be "on our tail" homeward bound.

Markers of Porkkala fell astern, again without incident, and we took off the lighthouses on the Finnish coast: Jussaro, Russaro, Utö.

Baltic Sailing—Woolies by Night, Shorts by Day

It was cold after the sun went down. As we angled out into the Baltic, a short steep sea kept the decks wet. During the afternoon the wind had basked into the north, and it blew hard during the night.

"If this is August, I wouldn't want to be here in January," said Walter, our professional seaman, as a polar wind knifed through layers of woolly clothes.

Next morning the wind lightened. By 4 in the afternoon I was stripped down to shorts from Bermuda and a Nassau straw hat!

The fabled island of Gotland lay abeam. We had covered 270 miles in 35 hours, a cousing sail across open water, very satisfying after peacefully "walking in the garden." The course had been circuitous to keep us well clear of the Soviet-controlled Estonian and Latvian coasts.

Again we sailed in the wake of ghosty ships.

Once these waters had been furrowed by the keels of eastern Vikings, the Rus. These hardy Northmen are not so well known as those who ravaged the Atlantic shores, but

* See "Helsingfors—A Contrast in Light and Shade," by Frank P. S. Glassey, National Geographic Magazine, May 1937.

Tree Stands Still in the Alands, Spinning Wheel and Ships' Banks Are Home Fixtures

[illegible]

[illegible] Vikings, Norsemen, Danes and occasional Swedes [illegible] who followed the "eastern way" were mainly Swedes.

From their homes in the skerries [illegible] light boats, they rowed up the rivers and down into the [illegible]. From the headwaters they portaged their boats [illegible] to the Black and Caspian Seas.

These mariners fought and traded their way around Christian Europe [illegible] Asia Minor, and on to [illegible] Constantinople. [illegible] Russia [illegible] of [illegible] Kiev. They founded Kingdoms [illegible], with capitals at Novgorod [illegible].

Gotland, has drawn ships through the [illegible] Island once was the center of [illegible] trade stemming from that eastern way. Its principal town, Visby, [illegible] London in size and importance [illegible] 1350, 6391.

[illegible] sailed from its shores to [illegible] Moscow [illegible] Gotland's [illegible] Legend of other sailors who had seen it the same way—Stone Age men riding rafts and bellowing [illegible] fjords of the far north; merchants returning from trading voyages to every known part of Europe and the Middle East. Then I remembered the armada that appeared off the island one July day in 1361. King Valdemar of Denmark landed, crushed all resistance, and forced tribute from the town. It was the beginning of Visby's decline.

We found Visby a fascinating place. There are no jarring notes; ships and other new buildings harmonize with the old. Visby

striking is the number of magnificent churches in various states of preservation.

In the narrow streets we relived bygone days: men-at-arms moving by torchlight, the town quiet behind its wall and moat, all approaches closed except the "Lovers' Gate" through which young couples were permitted to stroll into the country.

Our next destination was the island of Öland, close to the mainland—not to be confused with the Finnish Åland Islands. We left Gotland just as a fiery sun disappeared below lavender clouds. With the dark came a fresher wind, and soon the lights of the coast appeared. It was dawn when we dropped sails in Borgholm Harbor.

Above loomed a castle, a huge and forbidding pile, one of the most impressive ruins in all northern Europe. Certainly its magnificent courtyard, large enough for a game of polo, is on the grand scale and conveys a sense of regal pageantry.

As I wandered around, I was annoyed by names scrawled over every wall. Then I spotted a glass plate protecting a name scratched by a previous tourist: "Nils J——, Anno 1899."

Kalmar Controlled Sweden in Early Days

The Baltic is ringed by castles. But none seem as beautiful as Kalmar Nyckel, or Kalmar Key, a few miles beyond Borgholm, across the strait. For centuries it was known as "The Lock and Key of the Swedish Kingdom." He who held Kalmar controlled Sweden (page 640).

As we walked its corridors, I thought of the great drama it witnessed in 1397. Gifted Queen Margaret of Denmark brought Norway, Denmark, and Sweden together in the Kalmar Union, a federation successful only during her lifetime. And I pictured mad King Erik XIV working as a carpenter on the inlaid paneling of a second floor room while he awaited the reply of Queen Elizabeth of England to his marriage proposal.

Bill Morris and I planned a course directly for the Danish island of Bornholm. But our eye caught tiny dots of land on the way, a group called Christiansø. Two parallel islands formed a harbor. We decided to explore it.

A little past midnight we picked up close ahead Christiansø light. It was utterly dark. A Uje sea was running. To enter we had to stay exactly in the white sector of the light; there were rocks on both sides of the channel. Cautiously we went ahead. A flashlight showed a stone breakwater close abeam.

We were not disappointed in Christiansø. The harbor was not much wider than the boats were long. Only 160 people live on the island. Theirs is a rugged existence (p. 642).

During heavy northerly gales the seas surge through the harbor. Two years before, waves broke three feet deep along the quay. The whole village tended the fishing boats day and night.

Once strongly fortified, Christiansø is administered by the Danish Navy, which rents 18th-century houses and barracks to fishing families. Nothing except a lighthouse has been built here for 100 years (page 643).

Old fortifications bristle everywhere, rusted guns point to sea. Strangely, such islands with a military past are often the most peaceful and forgotten.

Bornholm—"Cork" in the Baltic

Bornholm lay 11 miles to the southwest. As we approached, we saw a rolling countryside of green and brown fields broken by the red roofs of twin towns, Sandvig and Allinge. As we rounded the northern point, the scene changed abruptly. The west shore rose steeply in wooded cliffs, surmounted by the impressive ruin of Hammershus fortress.

Flat farm land, haystacks, and sleek cattle reminded us of Holland. There were many windmills. Everything was neat and clean (page 646).

Rønne, the principal town, seemed new. Our taxi driver told us the grim reason. After the Nazi collapse the commander of the German occupation forces refused to surrender to any but British or American troops. The Russians wanted to take over, so mercilessly they bombed the town until the Nazi general capitulated. Immediately the Russians moved in. They remained until the spring of 1946, leaving reluctantly.*

Bornholm could be the "cork" in the Baltic, just as Porkkala is in the Gulf of Finland (page 625). Its strategic position is important.

Mines Still Lay in Wait for Unwary

Beyond Bornholm we encountered another reminder of war. The official British Admiralty-U. S. Hydrographic Office publication Sailing Directions contained doleful comments: "Mariners are warned to keep a sharp lookout for drifting mines . . . the temptation to cut corners must be resisted . . ."

Although we felt wooden sailboats were safe, we stayed within buoyed swept channels, especially since a steamer had been lost not long before taking a short cut.

Trafiking on the Swedish mainland was a

* See "Bornholm—Denmark in a Nutshell," by Minna Sutherland, National Geographic Magazine, [illegible]

***Caribbee*, Hoisting Her Reaching Canvas, Scoots Across Calm Blue Waters**

Unlike most in winter gales, the Ball is [illegible]

Stockholm's Old Town Has Much of a Modern City Wears a Medieval Look Pedestrians and Trolleys Throng Its Bridges

Carrotes on Lake Mälaren Guides Past Stockholm's Town Hall, Aglaia with Scott Red Dress

Day's Last Race Is Ended, Southern's Fleet Is Beached Bows to Shore, Anchors Out Astern, Drying Sails Hang Slack

A Swedish Yawl, Nicrosteel Sails Gleaming, Moors in Sandhamn Basin. Others, Right, Fly Over Through the Narrows

What a Treat Is Sandham's Regatta to Children of Young Parents!

[illegible]

Every Home in Havringe Lighthouse Stops to Watch the Americans Pass

[illegible]

Resplendent Medieval Costumes Bring the Knights of Wars to Life

Helsinki Market Place, Thronging with Life. Behind the Iron Curtain's Shadow. Farm and City Folk Barter over Produce

Four-masted *Pommern*, Sails Old Workhorse, Stores Her Canvas and Retires in Mariehamn

[illegible]

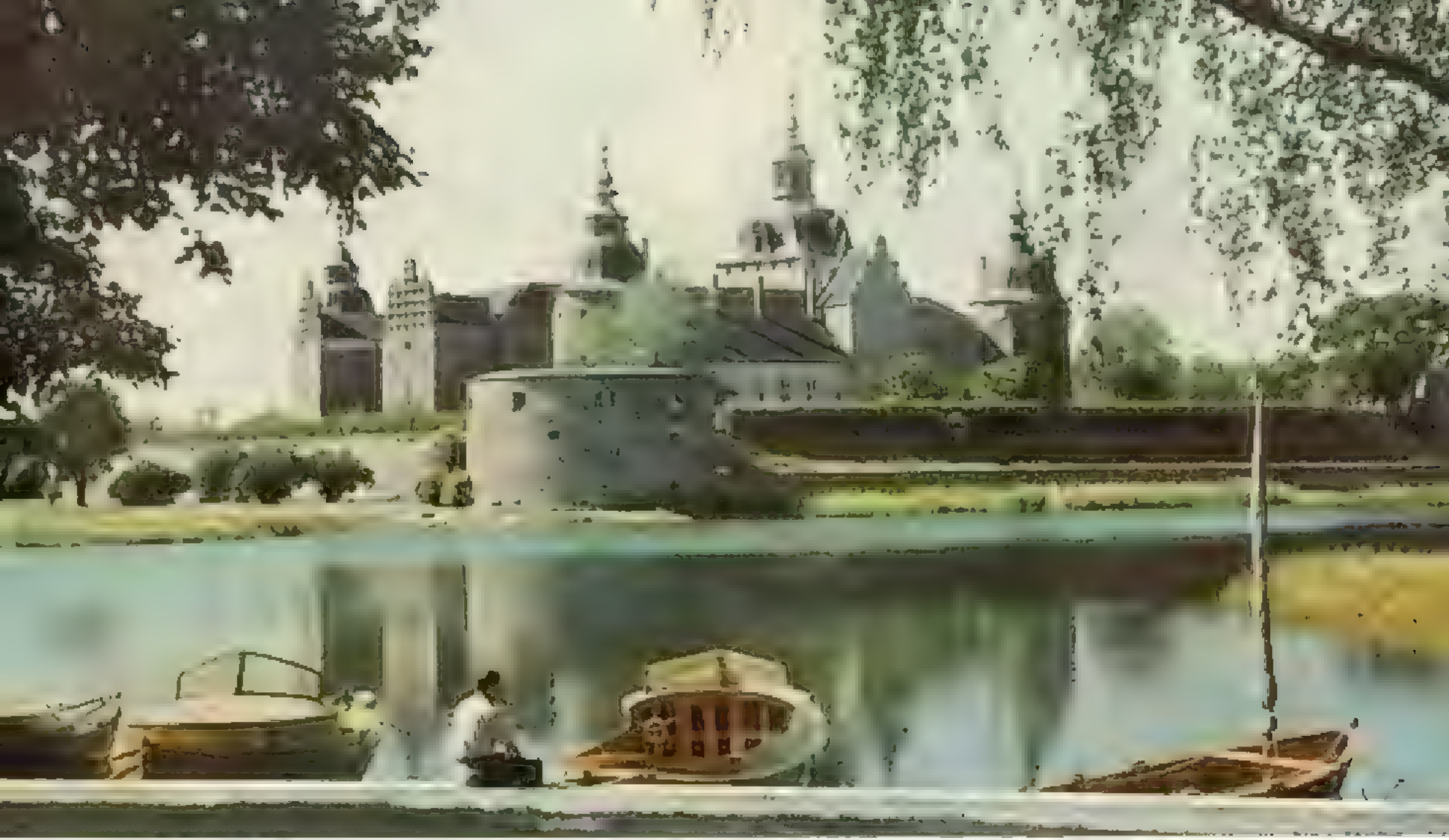
Time Stands Still in Vishy, Sweden's Museum City Poverty Is Its Fortune

▲ Visby's City Walls Extend Two Miles; Once They Green Valley Was a Moat

[illegible]

▼ Trolley Car and Cyclist Serve Visby, Once the Baltic's Richest City

[illegible]



Graceful Kronborg Castle Conveys No Hint of the 24 Sieges Which It Withstood in Three Centuries

Small Boats Thronging Torekov's Picturesque Harbor

[illegible]

Small Boy Delights in the Figureheads at Its Marine Museum

[illegible]

Skagner Berthed in Christiansø on a Dark, Rough Night. When Day Revealed Its Narrows, He Was Awed by His Own Temerity.

As Rare as a Dollar Is Chesapeake's Old Stone Fort

Corrosion Nodules Beneath the Hoists
on Thomas Flagon in a Carpenter's

Chrysocolla Nodules and Glass Floats
Right Dip into Bedrock Tier

dead city. Before the war it was an entry port for Polish coal, a terminus for ferries commuting to points on the south Baltic. The Russians stopped such traffic. Coal chutes stood gaunt and rusty along deserted quays, ferry slips lay empty.

American Bombers Flew in Baltic Door

During the war vast fleets of American planes roared over Trelleborg on their way to German targets. By coming in over the Baltic they avoided much German fire.

"Bombers would go by for an hour," said a Swede. "One time the commander of our antiaircraft batteries here in Trelleborg talked by radio to the commander of the American squadron. 'You are over Swedish territory,' said the Swedish officer. 'We know it,' replied the American. 'I must fire,' said the Swede. Our guns fired furiously. 'You are shooting too low,' radioed the American commander. 'We know it,' answered the Swede."

Before the war all shipping bound in or out of the Baltic had to round Falsterbo peninsula, the southwest tip of Sweden. Outlying shoals forced steamers close to the German-held Danish shore.

To prevent being bottled in the Baltic, the Swedes frantically cut a canal through the peninsula. It is not imposing as canals go, merely a wide ditch a mile long, but during the war it was of tremendous importance.

Today large ships again round Falsterbo, but we chose the new canal. As *Corsair* and *Argyll* passed through, I was struck with the parallel that forced the building of two Swedish waterways a century apart: the threat of Napoleon resulted in the Göta Canal (page 623), that of Hitler in the Falsterbo.

On leaving the canal we found ourselves in narrow waters. There are three exits from the Baltic to the Atlantic, two lying between the Danish islands, and the third, the Sound (Öre Sund), between the principal Danish island and the peninsula of Sweden. From Copenhagen (Kobenhavn) the Swedish coast is plainly visible.

Markers showed safe lanes to follow. For once buoys did not indicate hazards created by Nature, but by man. The aviators of every belligerent nation used the Sound as a dumping ground.

Again we sailed in the wake of history as the towers and buildings of Copenhagen lifted ahead (page 622). In these very waters occurred one of the most dramatic incidents in the career of that great British naval hero, Horatio Nelson.

A British fleet commanded by Admiral Sir Hyde Parker descended upon Copenhagen in 1801 and demanded that the Danes cease convoying merchant ships, thus aiding Napoleon. The Danes refused. Their fleet, not fully in commission after the winter, lay anchored under the protection of powerful forts. A frontal assault appeared futile.

But Nelson was undismayed. He secured his senior's permission to approach the Danes from the rear with half the British fleet. By night small boats sounded an unguarded channel the Danes thought safe. When morning came, the British ships sailed in. Some ships grounded, but Nelson did not hesitate.

The Danes fought furiously. Admiral Parker, thinking the contest hopeless, signaled to withdraw. When Nelson was told of the order, he raised a telescope to his blind eye. "I see no signal," he cried. "Continue fighting!" Most of the Danish ships were captured or sunk, dooming Napoleon's Baltic alliance.

Copenhagen—a Danish Paris

Copenhagen might be called a Paris of the northern countries.* Streets are wide and shaded by trees. Life is leisurely, based on sidewalk cafes and fine restaurants. Nowhere did we enjoy better food, yet, curiously, it was the only country where we were issued ration tickets. Denmark was not short of food, but the Danes had voluntarily tightened their belts to export meat and dairy products to other nations.

Everywhere in Copenhagen we saw the mark of one of her most energetic rulers, King Christian IV, that sage gentleman who refounded Oslo. Although he died in 1648, much remains of his city: a Stock Exchange, many churches, barracks now used as apartments, and even a round tower designed for astronomical observations. Peter the Great of Russia on a wager drove a team of horses up its spiral stairway.

As we cleared the narrow passage from the Sound, bound for Göteborg, a huge fortress towered over our decks. It was Kronborg at Helsingor, better known as "Hamlet's Castle." From its walls we had previously looked across the two-mile gap to Sweden. Now we were staring up at its stern battlements, but not as woefully as earlier sailors when its guns forced them to stop and pay toll.

Shakespeare chose an appropriate setting for his tragedy. The castle still broods, a somber mass full of threat.

* See, in the NATIONAL GEOGRAPHIC MAGAZINE, "9,000 Miles Through Europe's Oldest Kingdom," by Isobel Wylie Hutchison, February, 1946; "On Danish [illegible] Quest, January, 1940, "Royal [illegible] Adventurous, February, 1951, [illegible] Dates," by Maurice Francis [illegible]

[illegible]

[illegible] Fishing Fleet Sleeps [illegible] Until the Herring [illegible] Comes In!

[illegible]

The night we [illegible] the breakwater at the tiny fishing village of [illegible]. [illegible] we were in [illegible]. [illegible]

Our last [illegible] of the [illegible] turned [illegible] we [illegible] in the open [illegible], where we [illegible] compass.

We [illegible] last leg.

[illegible] we neared the lighthouse of [illegible] the beginning of the [illegible] We [illegible]

[illegible] When we [illegible]

As I [illegible]

[illegible] will not remain the "lake" of [illegible]

Men, even those now silenced, will [illegible] again.

Here Come the Marines

By Frederick Simpich

AT TUN TAVERN, Philadelphia, on November 10, 1775, our individual Marine Corps was born. Scrapping soldiers, made to fight on land or water—that's what the Continental Congress wanted. So recruiting officers, beating drums Salvation Army street style, "drummed up" the first of what are now America's fighting Marines.

That valiant little Tun Tavern band, with its flintlocks and funny clothes, was expanded to about 485,000 men in World War II, and suffered 65,000 casualties.

In its colorful career of 175 years, our Marine Corps has shot its way ashore in some 250 places and seen more odd nooks and crannies of the world than any other Yankee fighting force.

In that time it has ridden everything from camels and shaggy Mongolian ponies to rubber rafts, dog sleds, and submarines. For sheer audacity, reckless courage, and hair-breadth escapes, its exploits read as might some imaginative Plutarch's *Lives* of all the sea rovers, buccaneers, and hand-to-hand fighters since the wild days of Genghis Khan.

Soon after Communist North Koreans invaded across the 38th parallel, ground and air units of the Fleet Marine Force, based at Camp Pendleton and El Toro, California, sailed from San Diego to join Gen. Douglas MacArthur's forces. Within a few days after landing, the Leathernecks were in action against a numerically superior enemy.

Message Worth Framing

Jealous of its hard-earned "first to fight" reputation, the Corps was ready and raring to go when the word flashed from Tokyo that MacArthur wanted all the Leathernecks that could be sent him.

"Hey, Mac, we're back!" sang out one Marine as the vanguard elements of the famed First Division hit the shore in Korea.

"Compliments of the Corps!" So read legends on the bombs loaded under the wings of Marine ground support planes.

The Marines are pretty proud that MacArthur called for them in Korea—so proud, in fact, that this official document probably is due for framing and preservation. The Corps knows a historic exhibit when it sees one, and will undoubtedly take good care of the MacArthur message.

Loving a frolic as well as a fight, the singing, skylarking Marine endears himself to American hearts.

Proof of Marine popularity is the eager way grandstand crowds whistle, clap, and shout "Here come the Marines," when, on any Fourth of July or other parade day, the Leathernecks march by.

In all their exciting annals, from China to the Caribbean, the Marines are to us what the Foreign Legion is to the French, or what the Grenadier Guards and the Gordon Highlanders are to the British.

Patriotic Americans sense this, even in the crashing chorus and triumphant words of the *Marines' Hymn*.

> From the Halls of Montezuma
> To the shores of Tripoli,
> We fight our country's battles
> In the air, on land and sea;
> First to fight for right and freedom
> And to keep our honor clean;
> We are proud to claim the title of
> United States Marine.

All around the world, on troop transports bound for adventures overseas, under tropic [illegible] billets behind the fighting lines, the words of their song have inspired legions of Marines to a high resolve and renewed faith in their oath of loyalty to the flag.

"From the Halls of Montezuma to the shores of Tripoli" is not just a poetic line. Marines went with Gen. Winfield Scott on that almost interminable march to Mexico City in 1847, from which there was no turning back.

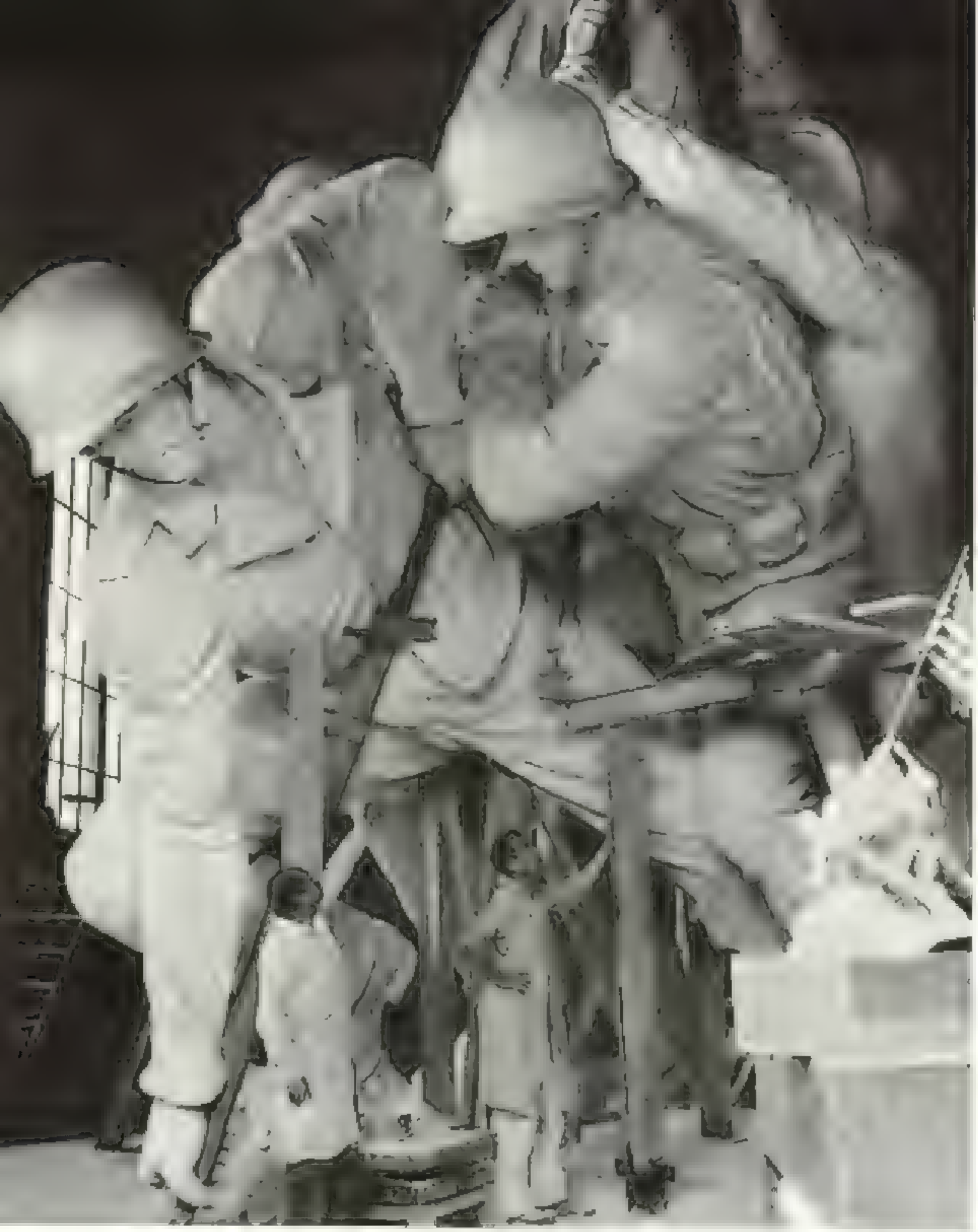
When Scott drew his sword and threw away the scabbard, it was conquer or die. He pushed on with Marines and soldiers to the dramatic Battle of Churubusco; despite heroic Mexican defense, he scaled the walls of Chapultepec and took the National Palace—the "Halls of Montezuma."

Barbary State pirates, on the north coast of Africa, used to abuse our merchantmen. After an arrogant pasha cut down the flag from over our consulate in 1801 and declared war on the United States, our Navy and Marines struck the shores of Tripoli.

Here the Leathernecks, under Lt. Stephen Decatur, performed feats of daring still fresh in warship yarns.

In one astounding move, Marines marched from Alexandria, Egypt, with a group of native troops and mercenaries across the Libyan Desert, along the shores of the Mediterranean, to attack and take the walled city of Derna in Tripoli. Over it, for the first time in that part of the world, they raised the Stars and Stripes. This was in 1805.

When a friendly pasha gave Lt. Presley Neville O'Bannon, USMC, a peculiar type of



Two Jesus Heads Whose Images Symbolize Mission Work at Its Finest

Seasoned in World War II's Jungle Battles, Marines Head for a New Campaign in Korea

[illegible]

[illegible] while with the Marines [illegible] of this Manual [illegible] by officers of the Leatherneck [illegible]

How Leathernecks Got Their Nickname

That of [illegible] Leatherneck [illegible] came from a black leather [illegible] Marines [illegible] from getting [illegible] by the whistling sweep of a [illegible] sword.

Though Leatherneck is thus explained, no one seems to know the origin of another nickname, "gyrene." Webster defines it as Army slang—*G.I.* plus *Marine* [illegible] used "derogatorily." Marines [illegible], however, do not mind being called gyrenes.

Just prior to the outbreak of the Korean War, the Corps numbered about 3,000 [illegible] and 65,000 men. Our National Security [illegible] of 1947 [illegible] the Marines [illegible] of combined arms [illegible] with the [illegible] defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign."

The law further says Marines shall work with the Army and Air Force to develop tactics, techniques, and equipment used by land forces that they shall provide detachments for expeditionary duty aboard ships of the Navy [illegible] other duties as the President [illegible]

These last words mean that Marines may still be ordered to land overseas to protect American lives and property as in the past or to guard our mails [illegible] or other disasters, or protect the [illegible] and the Marines [illegible] of riots or [illegible]

[illegible] days of "boot camp," where recruits are trained, it is pounded into a Marine's head that he must think and act quickly [illegible] to lead to save his life.

Marine Boots at Parris Island, South Carolina, Proudly Put on New Uniforms

[illegible]

So [illegible] Marine was greeted [illegible] Brig. [illegible] Diego, he brought his prized Russian medal [illegible] crowded [illegible].

When [illegible] San Diego [illegible].

[illegible]

At [illegible] Point [illegible] Gen. [illegible] 1898.

[illegible]

[illegible] at the right [illegible] with my left hand [illegible] in the [illegible] wanted [illegible].

A Stove Lid Serves as Armor

[illegible] stove lid [illegible].

That was [illegible] bullet-spraying [illegible] shooting gallery [illegible] stove lid saved me.

[illegible] Marines [illegible] the Boxer Rebellion.

Many men were [illegible] Marine Corps.

[illegible]

Grinning "Skinheads" Get the Word on How to Make Up a Bunk

"You fold it like this and tuck it under here," the sergeant tells a platoon of Marine recruits at Parris Island. [illegible] the instructor drops a penny on the bed. If it doesn't bounce—rip everything apart and try again.

After long observation [illegible] of our armed services, from the China coast to the Rhine, I [illegible] the Marine officer is [illegible] to his men. They are a tight Three Musketeers-like outfit, "All for one and one for all." And so the enlisted men have [illegible].

Take Herman H. Hanneken, a St. Louis boy who served five years in the ranks and went up to be a general. As a sergeant in Haiti in 1919 (serving as a captain in the Marine-organized native gendarmerie) he [illegible] an exploit [illegible] topped in the annals of Marine adventure.

There was a revolution. Marines were there to help the Haitian government [illegible]. [illegible] leader was [illegible] Charlemagne Peralte. Once he was disposed of, all [illegible] Haitians felt, peace would be in sight.

Assisted by Cpl. William R. Button, a [illegible] Marine, Hanneken evolved a clever trick. [illegible] their faces and donning [illegible] old civilian garb [illegible] these two Marines actually passed all the enemy sentries, got into the headquarters, and shot [illegible] himself. Not only that; they dragged his body down the mountainside and had it duly photographed at Marine headquarters.

Hanneken and Button got the Congressional Medal of Honor for "extraordinary heroism and conspicuous gallantry and intrepidity in actual conflict with the enemy."

That was only the start of Hanneken's amazing career. He went on later [illegible] to capture other rebels when [illegible] Nicaragua on the road to peace, and finally [illegible] the Pacific war.

Awarded the Navy [illegible] the Gold Star in lieu of a second Navy Cross, the Legion of Merit, and [illegible] medals [illegible] Hanneken was retired as a brigadier general after a [illegible] 34-year career.

Officers May Go on Delicate Missions

I know one Marine officer with the gift of tongues and the [illegible] of a Sherlock Holmes, who every now and then takes off [illegible] "Where is he?" They [illegible]

[illegible]

Helicopters and Seaplane Tanks Help Marines Fight Afloat, Ashore, and Aloft

[illegible]

Marine Riflemen Surprise the Defense with a Helicopter Landing

[illegible] action with the First Marine Division on the Korean front. Among [illegible] evacuation [illegible] was tested here, in a demonstration at Quantico, Virginia, [illegible] how a twin-rotor ship can drop men behind enemy lines (page 6[illegible])

behind the scenes, he's busy with cloak and dagger.

Marine officers often serve as naval attaches, some aid the State Department on missions to such remote capitals as Addis Ababa, or in trying to negotiate a peace between warring factions in turbulent lands.

When in 1846 war with Mexico was imminent, and we believed that Great Britain and France coveted California, President James K. Polk [illegible] Marine Corps on the West Coast, and to Capt. John C. Frémont, who was out there on an exploring trip.

Polk chose Marine Lt. Archibald H. Gillespie as his agent. Gillespie made his way across Mexico in disguise, talked to the commander of our Pacific squadron, Commodore John D. Sloat, then sailed to Monterey. There he gave Consul Thomas O. Larkin the White House message.

But Frémont was away, up near the Oregon line. After a trek of 600 miles through savage Indian lands, Gillespie met up with him.

It's history now that our western boundary was extended to the Pacific; and Gillespie, by courage and tenacity, played his part in gaining California for Uncle Sam.

California and the Marines have always been good friends. When the *Cyane* sailed to take San Diego, Lt. Stephen Clegg Rowan its executive officer, went ashore on July 30, 1846, with a Marine guard commanded by Lt. William P. C. Madden. It was this Marine officer, local historians say, who doubtless raised the Stars and Stripes over that part of San Diego known as Old Town. It was the first time our flag flew hereabouts.

Madden served with distinction in the California campaign.

Today, Marines and former members of the Corps are active in San Diego life.* The dramatic critic of the morning newspaper is a former Marine. So is the owner of the largest sporting goods store, the window trimmer at a big department store, the undersheriff of the county, an assistant cashier at a large bank, and a former mayor of Coronado.

When they call San Diego a "Navy town," that, of course, takes in the Marines.

Hush-hush Training

Hush-hush training—in radar and espionage work—goes on secretly behind barbed wire at Camp Del Mar, in southern California.

There I visited Capt. Kenneth J. Houghton, USMC, who a year ago took a group of men

* See "San Diego Can't Believe It," by Frederick Simpich, NATIONAL GEOGRAPHIC MAGAZINE, January 1941.

Marine Fly Boys Train on Sleek Jet Planes

[illegible]

[illegible] Mirages [illegible] Operation Mike [illegible] Hawaiian group. The [illegible] crew and the [illegible] of Mirages [illegible] Texas. They were [illegible] lives.

From the submarines [illegible] groups of observers [illegible] strapped to [illegible] rocket [illegible] These [illegible] strength, [illegible] Mirages [illegible].

Of these Mirages with [illegible], [illegible] the [illegible] which [illegible] and [illegible] collect [illegible] the [illegible] zone. He [illegible] Mirages [illegible] 2,000 [illegible] [illegible].

Keen Power of Observation Needed

That [illegible] of observers [illegible] was [illegible] another [illegible] by [illegible] from [illegible] Major Gen. Harry J. Collins [illegible].

Men with amazing powers of observation and memory are needed [illegible] this [illegible] same [illegible] and [illegible] the "[illegible]" [illegible].

Captain Houghton [illegible] observer [illegible] Walter [illegible] which he was interested. [illegible] to look [illegible] seconds, then [illegible] he could [illegible] the room in [illegible] seconds. He [illegible] another test in a different room he [illegible] in one minute.

In [illegible] the [illegible] were the [illegible] for rubber boat raids with Marines. [illegible] experts, capable of swimming for hours and in rough seas, can do these hard, sometimes [illegible] spearheading jobs.

[illegible] State Department has [illegible] the Marines to help in restoring order in certain small countries where Uncle Sam has had to clean up [illegible] service, [illegible] and perhaps [illegible] local gendarmeries. But such duties seem to be disappearing.

Primarily, Marines are [illegible] troops. As a small force they [illegible] on diplomatic [illegible] legations and embassies and as [illegible] protecting American citizens and their property abroad.

But many Marines [illegible] since the Seminole War of 1835-42 in Florida and our war with Mexico, have been [illegible] with the Army and, of course, with the Navy [illegible] of the Navy Department.

Usually in a Spearhead Role

Because the Army and Navy are so much larger, the Marine Corps has usually played a spearhead [illegible] role.

In [illegible] World War II [illegible] of the Central Pacific, Marines [illegible] islands from which Army and Navy planes later flew long-range [illegible]. The Marshalls and [illegible] are notable examples.

The Corps itself knows how dangerous [illegible] it would be for the Marines to be [illegible] the fighting powers of the other armed services. It never forgets that the Army, like the Navy, has its special powers and functions. [illegible] the reputation of any particular unit in order to [illegible] prestige for itself.

Since their early days of [illegible], Marines have been trained for [illegible]. [illegible] first [illegible] in March 1776, when [illegible] ships [illegible] the [illegible] ammunition and powder. This was the first successful naval operation of the Revolution.

It soon must be evident that, from their [illegible] of the

[illegible] Marine Corps [illegible]

Feet First, Marines Leave a "Sinking Ship"

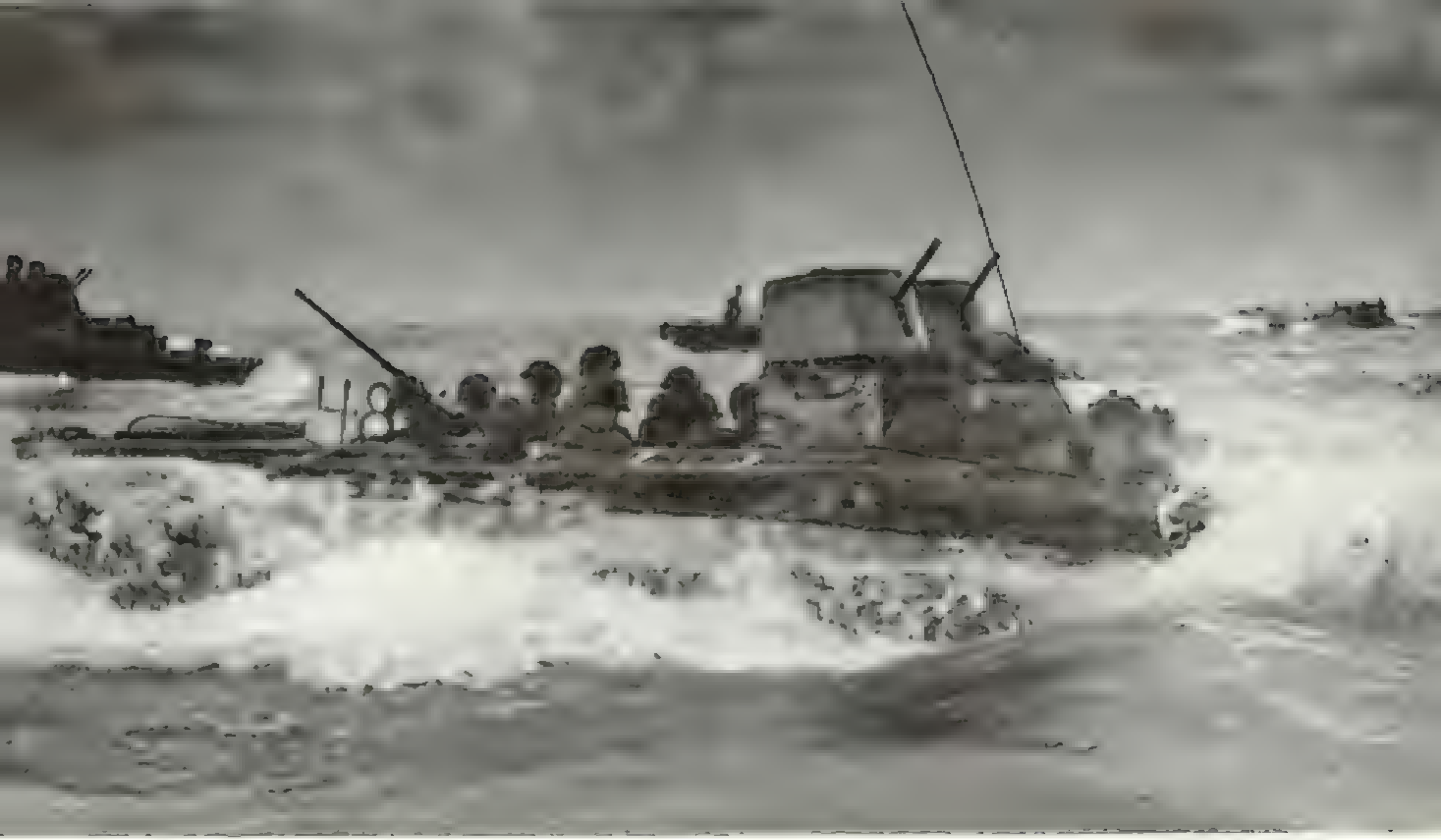
In the swimming pool [illegible]

Recent Marine Weapons Pass in Review at Camp Lejeune

[illegible]

TNT Blasts a Pillbox; Marines Move In for the Kill

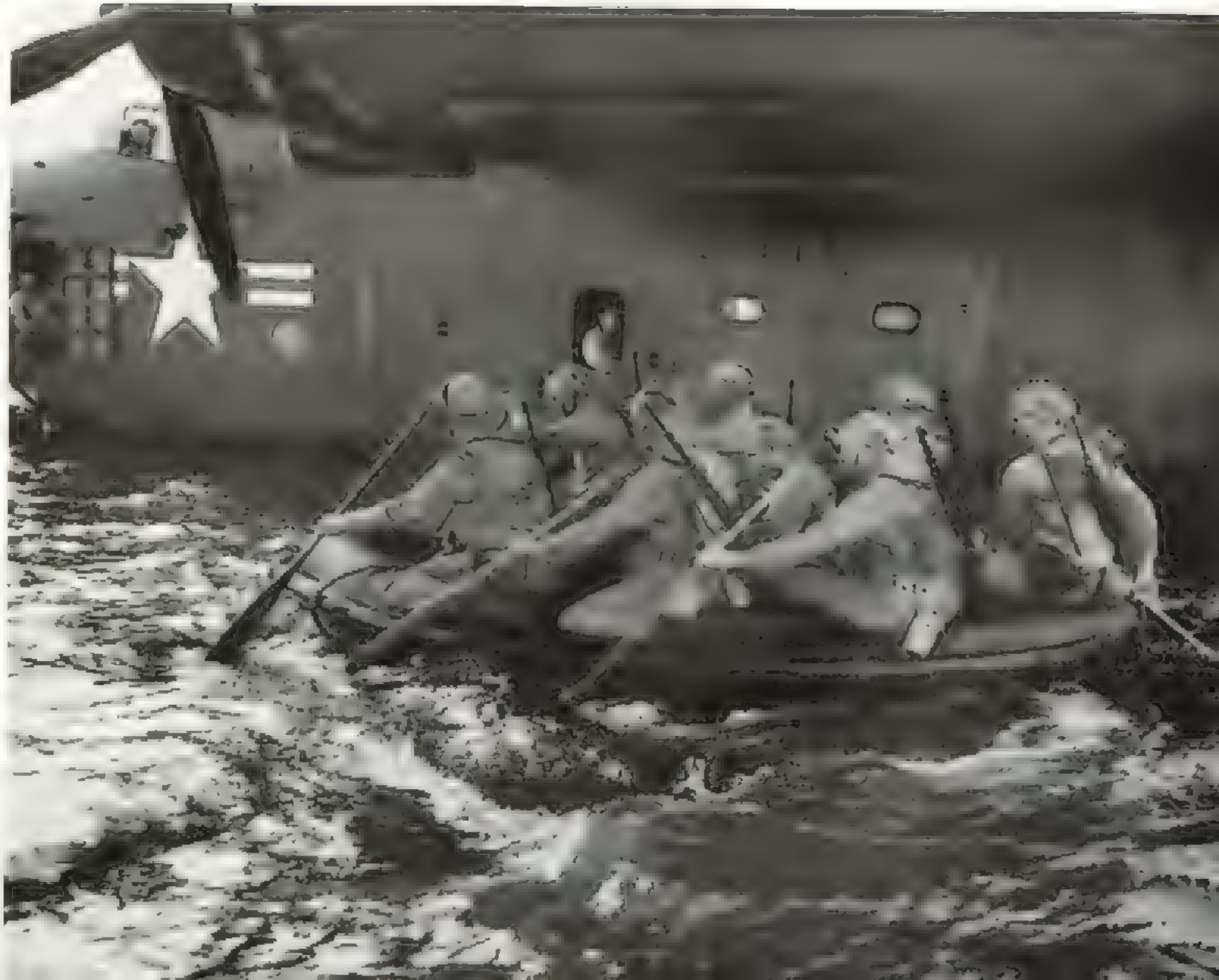
[illegible]



Bound for Japanese-held Tinian, a Boat's Churns Through the Sea with Leathernecks Steeling for a Fight

[illegible]

Ambushed Marine Scouts Faces Daubed Navy on the Enemy



"The World's Deadliest Weapon . . . a Marine and His Rifle"

So said the late General of the Armies John J. Pershing. The AEF commander's mark was inspired by Marine exploits in such World War I [illegible] as Wood Soissons, Chateau Thierry, St. Mihiel, and Meuse-Argonne. For 175 years Leathernecks have seen action in more of the world's odd corners than any other American fighting force. These men train at [illegible]

Handbook Rifleman, Marines laid down the British drill of the *Scoops* and learned that [illegible]

In [illegible] fighting originated a distinctive feature of Marine uniform—the crimson braid knot on officers' caps. Tradition says Marines first sewed bits of lace on their headgear so that comrades firing from the ring could distinguish friend from foe.

Wars End, but Training Doesn't

For 175 years Marines have never ceased [illegible] That training carried them from Guadalcanal and Tarawa to Iwo Jima and Okinawa in the last war, and now to Korea [illegible]

Now there is [illegible] than ever, but with new weapons and new tactics. I know I've lost flown to their principal bases—Quantico in Virginia, Cherry Point and Camp Lejeune in North Carolina, Parris Island in South Carolina, and San Diego, Camps Del Mar and Pendleton and El Toro, in southern California.

I spent a week with Maj. Gen. A. Houston Noble, at that time commander of Parris Island boot camp. He and his gracious wife, fondly known to the whole camp as "Miss Addie," are heart-warming examples of that respect and affection which the best type of enlisted Marines feel for their officers and families. You see here with what regard and protective pride officers treat their men.

Marine Corps history is full of heroic cases in which officers lost their lives trying to save their men.

Marines are made, not born. You see how [illegible] on Parris Island (pages 650, 651, 655, 670) and at the other boot camp in San Diego. Traditionally, in peacetime or in wartime, they're all hand-picked volunteers. In the standard ten weeks of tough, trying, back-breaking training they suffer, die, and are resurrected. Only the fit survive.

"Sure, we first shingle their heads close as a mule's tail," said General Noble. "That's a mighty social leveler; that and the rough dungarees make 'em all look and feel alike. Then you can't tell a millionaire son from a Brooklyn paper-hanger's son."

And here the DI, or drill instructor, a [illegible] mud and, drives them [illegible] hard path to [illegible] perfection.

* For additional [illegible] be Marine Corps, see [illegible] Cumulative Index [illegible]

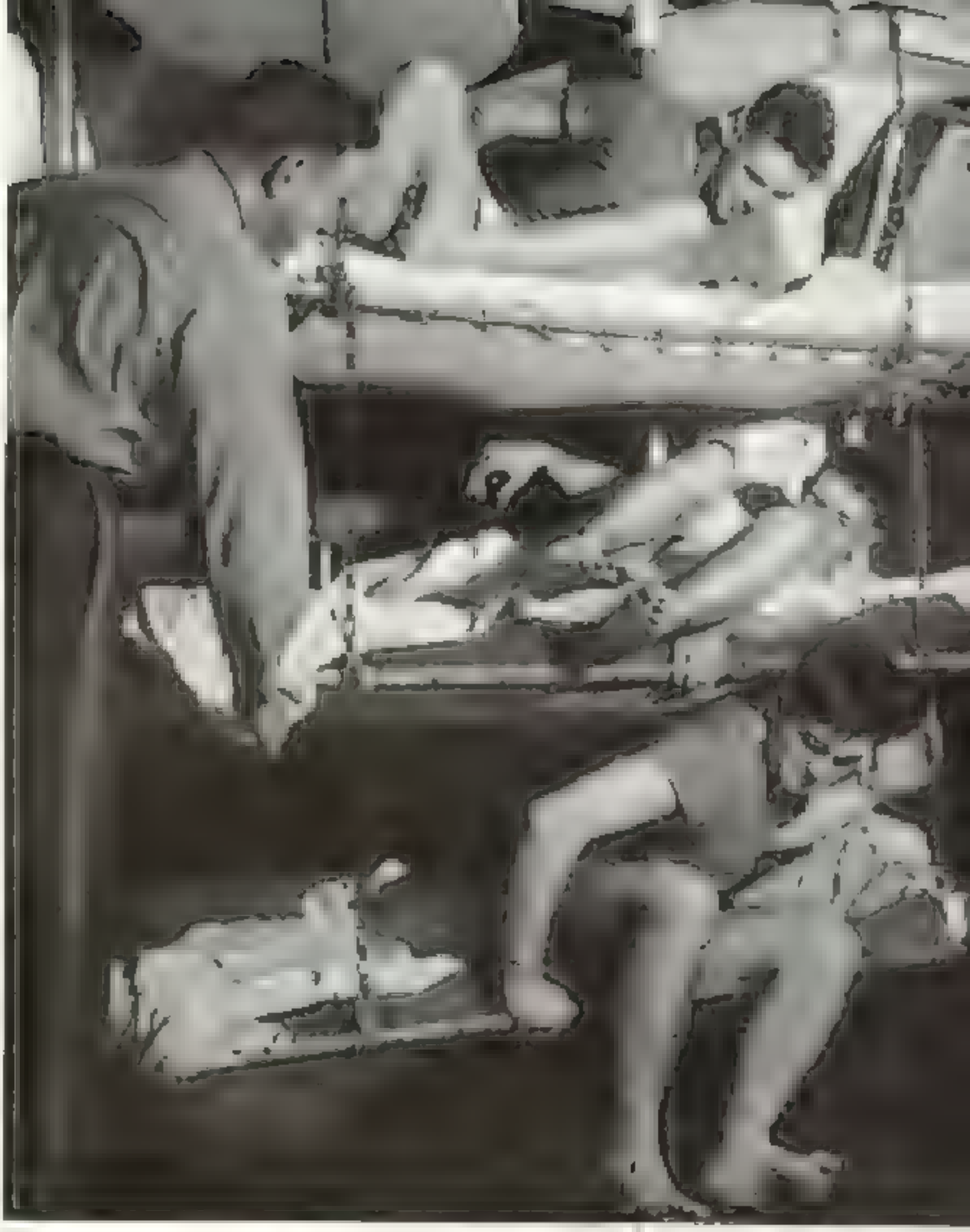
"After a few weeks of [illegible] they [illegible] to fit his pants, [illegible] sometimes. We fatten them up."

[illegible] they drill, drill [illegible] they [illegible] out, [illegible] shoes, scrub floors, make bed, polish [illegible] and always on the double. Run, run, [illegible] to the [illegible] next week.

[illegible] they're as tired as they seem is shown.

[illegible] number [illegible] can see a point [illegible] Even then [illegible] to [illegible] Sometimes [illegible] Comes [illegible] to [illegible] them for [illegible] use to [illegible] to [illegible] equals.

The [illegible] with knives, [illegible] party [illegible] thrust with [illegible], and [illegible] how to break a [illegible] or shall with a [illegible] what necessary to [illegible] At [illegible], learn to hit an enemy in the back of the neck with the edge of a hand and knock him cold.



"Hold the Sack, Mac—Two Dollars!"

[illegible] high-ranking officers and [illegible]

"We drilled it into them, over and over," said General Noble. "Till they came to believe, themselves, that a Marine is the toughest, most fearless, and invincible fighting man on earth."

At the rifle range I watched recruits practice firing.

"Don't pull that trigger!" [illegible] "Squeeze it like you would [illegible] out of [illegible] the [illegible] bowl!" [illegible]

"And you there, firing prone! Keep your rump down! Don't stick it up [illegible] Lower, or some sniper will shoot it off! Keep flat! Dig your [illegible] into the sand! Move snake tracks with your [illegible]!"

Women Marines [illegible] giggle [illegible] would [illegible] "Sweethearts" [illegible] they call the recruits [illegible] trade.

Men [illegible] sticks to [illegible] each marksman's [illegible] target; then they'd pull down [illegible] white paper [illegible] up [illegible]

When [illegible] they waved a red flag—the [illegible] Sergeant [illegible] for [illegible]

Although [illegible] Marine careers [illegible] officer must put in hours of [illegible] at regular intervals, to keep [illegible]

From Boot Camp to Stations

When [illegible] assigned to [illegible]

Sailors in "Dungarees" Bless, Marines Stand at Parade Rest on Wasp's Flight Deck

Marines pray as well as fight. At El Toro, for example, they have in their chapel a three-sided altar—a side for Jews, one for Protestants, and one for Catholics. They're liberal, and tolerant always of the other fellow's faith. If a wounded buddy is dying, they bare their heads or kneel while a chaplain says a simple prayer. Or in New York, or New Orleans, they may all flock to the big cathedral, say on Christmas Eve, to attend a pontifical solemn High Mass.

Quantico Is a Tough School

Buzzing helicopters, like giant "snake doctor" insects, hover over the fields and forests of Quantico, 35 miles down the Potomac from Washington, D. C. This is the big Marine school, with especially tough, skull-busting advanced courses for majors and colonels.

Think of the clumsy saillouts used by early explorers bereabouts, with maybe one small muzzle-loading cannon good only for scaring Indians. Compare them with a modern Marine "Water Buffalo," or seagoing tank, with machine guns and a rapid-fire cannon that shoots several miles (page 658).

We flew in one twin-rotor "Sausage." From it we watched a sister helicopter from which dangled a cable with a big hook on the free end of it. Hovering low over a field howitzer, the copter picked up the cannon with that hook, lifted it upfront the sky, carried it a mile, and set it down ready for firing, all in two minutes.

"We train gun crews to do that at maximum speed. That's so that any time, especially in a fog or on a dark night," explained an officer "we could move guns quickly by air, drop them down behind enemy lines or in some other unexpected place, and suddenly commence shooting."

This whole Potomac bank at Quantico fairly crawls with amphibian vehicles, engaged in onshore training problems (page 652). We rode out into the river, with a squad of Marines in spotted camouflage suits, in an amtrack LVT (Landing Vehicle, Tracked).*

Over a near-by Water Buffalo hovered a helicopter. It lowered a harnesslike affair on a cable and "rescued" a wounded man from the Buffalo (page 653).

This school, commanded by Maj. Gen. Franklin A. Hart, emphasizes amphibious war. Besides classroom work with movies, maps, textbooks, and lectures, it sends students into the field and out on the river or up in the air, to work out problems using men, weapons, and vehicles.

Often one group of officers and men will pretend to be the "enemy," who are trying to seize, or trying to defend a beachhead. This enemy is opposed, of course, by Marines, simulating another "army."

Each year the Quantico course ends with an Amphibious Command Post Exercise, which includes the theoretical landing of an enemy force of corps size at Onslow Beach, North Carolina. Then students from this school act as landing force commanders and staffs, and Marines from the Second Division, Camp Lejeune, seek to "repel" the attack. In this training, officers and men of the Navy and some of their ships and transports take part, sometimes other Marine amphibious exercises are held with West Point cadets and Annapolis midshipmen participating.

Training in communications is heavily stressed.

Take this situation: a landing party is shooting its way ashore, but strikes a pillbox, a fort, or other enemy obstacle that's slowing it down. It wants gunfire from the ships lying out at sea behind it, or it wants its Marine airplanes to come over and bomb those enemy positions that are impeding its advance.

How to get that word back to the ships or up to the planes, most quickly, and tell them just where to drop their shells and bombs?

To perfect radio and other communications training, Marine airmen take duty with the ground troops; sometimes a Marine Infantry or Artillery liaison officer now rides with the bomber pilots to speed up effective cooperation.

Finally advanced classes at Quantico tackle theoretical problems involving new enemies, new weapons, and new ways of fighting a war. They apply these to this or that part of the world map. Who will attack us, where, and how? Where would we go to fight back? Students get free rein; many novel approaches and fresh ideas come to light.

The Fleet Marine Force

The term "Fleet Marine Force" is well understood in the Navy, but it's new in law, so Marine officers are glad Congress used it in the 1947 act. Such a force, in brief, is a balanced force of Marine land, air, and service elements integrated with our Atlantic or Pacific Fleets. It is trained and equipped to seize or defend advanced naval bases, and to fight as far inland as the Navy wishes.

For years, before Pearl Harbor, Marines rehearsed on just how to make such landings.

Early as 1921, in war plans for use in the Pacific, Navy and Marine strategists began

* See "Landing Craft for Invasion," by Melville Bell Grosvenor, NATIONAL GEOGRAPHIC MAGAZINE, July, 1944.

The "Old Man" Gives His Opinion of Marine Performance in "Operation Portrex"

Standing [illegible] Maj. Gen. Franklin A. Hart, then commanding the Second Marine Division, [illegible] of Vieques Island, Puerto Rico, in 1950. [illegible] World War II [illegible] [illegible] of North Korea.

figuring out how such an island-hopping war would have to be fought. And, remarkably, almost step by step, that is exactly how it was fought, using Marines to spearhead the assault landings and to seize advanced naval bases. The Marine landing force was covered by Marine and naval planes from [illegible] advanced bases, and by [illegible] naval gunfire [illegible] over the heads of the Marine landing parties.

An Intelligence Officer Vanishes

Attached to these [illegible] war plans was a [illegible] study of "Advanced Base Operations in Micronesia," prepared by Lt. Col. Earl Hancock Ellis, USMC.* About 1923, while doing [illegible] intelligence work in connection with the Japanese-mandated Pacific islands, Ellis mysteriously disappeared on Koror Island, in the Palau group. Perhaps the Japanese knew.

War plans for tomorrow are of course [illegible] "top-secret" secrets. Probably, however, say the planners, "We've stopped fighting the last island-to-island war." Vastly different problems of transport and logistics arise when, for example, we study Turkey as a possible stage of future fighting.

"You hear a lot of [illegible] coming [illegible] airborne [illegible]," said one officer.

"Sure, airborne troops have their place. Russians and Germans have proved that. But in any major war of tomorrow the bulk of men, supplies, heavy weapons, and ammunition will still have to cross the sea in ships. That means Marines will still have to make their beach landings."

"In order to [illegible] the single battle of Okinawa," points out Gen. Alexander A. Vandegrift, USMC (retired), wartime Com-

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* See [illegible] by [illegible] in [illegible] Marine [illegible]

Marine Infantrymen Acting as Eyes for a "Blind" Tank, Guide It by Telephone

[illegible]

[illegible] important of the Corps, about 1,000,000 measurement tons of construction and supplies had been moved across from the Western Hemisphere, as well as 275,000 U. S. troops.

"[illegible] arriving aircraft will no more replace vehicles of the same type on the same flight than will [illegible]," says Fleet Admiral Chester W. Nimitz, who faced the problem in the Pacific. "For example, the C-87 has [illegible] tons of cargo which it ships can transport from San Francisco to Australia, another work horse for the same [illegible] C-87 airplanes moved to [illegible] heavy moved personnel plus 80 [illegible] tonnage to provide gas along the route and at the far end of the run."

Marine Fly Boys Are Ready

For [illegible] of advance movement of [illegible] small Marine forces, the fields [illegible] at Cherry Point in North Carolina and at El Toro are ready night or day to [illegible] the air in their big transport planes [illegible].

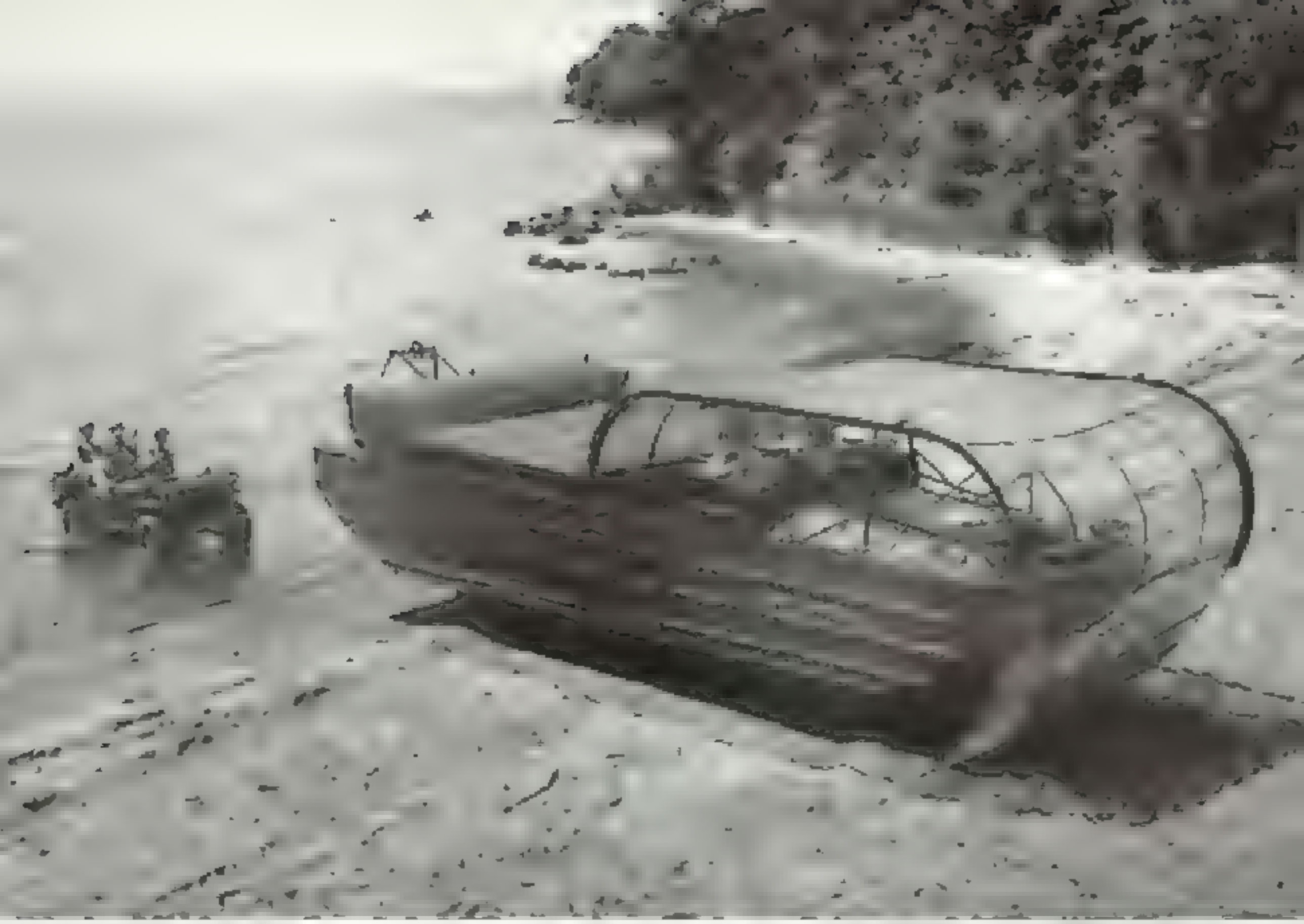
[illegible] they've got their weapons at hand, they're [illegible] and assembled close to the runway. [illegible] and start [illegible] in a few minutes. Though [illegible] the [illegible].

Training planes are [illegible] at Cherry Point [illegible] over a [illegible] pile in a Chinese [illegible]. Most [illegible] right here in the great [illegible], where expert [illegible] have [illegible] out of the [illegible] of [illegible].

Brig. Gen. Ivan W. Miller, [illegible] known as "Ivan the Terrible," [illegible] to [illegible].

We saw [illegible] being taken out and put together. Men pulled damaged wings [illegible]

* See "Your Navy in Peacetime" by Fleet Admiral Chester W. Nimitz, [illegible] Magazine, June 1946.



[illegible]

An Ingenious New Gadget Lays a Steel Carpet to Speed Marines Across a Beach

[illegible] of the [illegible] the LVT [illegible] World War [illegible] across the [illegible] since World War II [illegible] on the Potomac near Quantico.

planes as a farmer's wife might dismember a chicken.

Something looked fishy [illegible] air-plane [illegible] and [illegible] great [illegible] kept at [illegible] temperatures. [illegible] little [illegible] airplane [illegible] could [illegible]

Then what [illegible] warplane? It made you think of [illegible] in the storerooms of some great airplane factory, such as Douglas or Consolidated Vultee. I [illegible] a store-keeper to [illegible] when all his [illegible] odd items were [illegible] He did. He had anything from [illegible] to a 2,000-horsepower engine.

Pilots Fly with Odd Pets

"It was [illegible] at those [illegible]," said Maj. M. [illegible] Warren, who flew [illegible] Island [illegible] Cherry Point Air Station, and over the Carolina swamps [illegible] field.

"The company [illegible] carried [illegible] pets [illegible] were [illegible] with our Marine [illegible] the wheel and pretended to fly!

"I guess [illegible] Any-way, one day, [illegible] over the jungle [illegible] he [illegible] down to the familiar green trees and jumped out the open window.

"Another young [illegible] pilot [illegible] with [illegible] against [illegible] One day, when the [illegible] had [illegible] was [illegible] down, [illegible] for [illegible] took his [illegible] belt. Then he set the plane on the automatic pilot and went back to [illegible]

"Just then," continued Warren, "a young [illegible] to wave a friendly greeting to us. When he saw [illegible] it was [illegible] on the window with [illegible] 'Let [illegible] was waving to [illegible]

"He arrived [illegible] at the air-port [illegible] and [illegible] 'They [illegible] big [illegible]' "

Of course, in the Marines' 175 years of [illegible] and adven-tures [illegible] Marines [illegible] as a [illegible] pilot in North Carolina and [illegible] W. J. [illegible] an open-cockpit biplane.

Lady Leathernecks Return to Duty: Their Motto: "Free a Man to Fight"

[illegible]

There's even one (unconfirmed) story that while hunting wild geese around the Tulare marshes Lt. Gen. James T. ("Nuts") Moore (retired) ran out of shells. With traditional Marine ingenuity and quick thinking, he flew low over the swamps in his open plane; this scared up the geese. Then he flew back, under them, reached up and grabbed a fat gander by the feet!

When I asked General Jerome if I might quote him on this story, he said, "Well, strange things can happen when Marines get ashore in China!"

But never mind China. Look at Camp Joseph H. Pendleton, that 125,000-acre base at historic Santa Margarita Ranch, on the coast of southern California. It's headquarters for the First Marine Division.

In peacetime it leases some of the land—9,627 acres this year, for rentals totaling $243,562. Tenants grow grain, peppers, tomatoes, and vast fields of flaming red poinsettias. On its hills it runs some 27,000 sheep, goats, horses, and cattle.

Pendleton is a self-contained municipal unit with movies, playgrounds, stores, chapels, laundries, clubs, libraries—every facility a city of 25,000 needs—besides myriad barracks, offices, machine shops, and acres of canvas-covered weapons.

Colossal field maneuvers, with bulldozers and tanks in motion, plow terrifying scars over its grassy and brush-grown hills, heavy cannon fire echoes like thunder from distant mountains. And, every now and then, the whole division takes to planes, ships, and amphibious craft and roars away to San Nicolas or San Clemente Island, off the California coast, for that ever-lasting amphibious training which keeps Marines on their toes.

Rancho Now a General Headquarters

One night I sat with the commanding general, Maj. Gen. Graves B. Erskine (recently sent to the Far East), and his talented wife, in their historic ranch house headquarters. This Spanish rancho—now a Marine camp—was once owned by Andrés Pico and his brother Pío Pico, last Mexican Governor of California. Their vaqueros and others, armed with lances, fought the American soldiers and Marines under Gen. Stephen W. Kearny at San Pasqual in our war with Mexico.

I've been in many a Marine headquarters, from Haiti to the Philippines, but I never saw a setup like Camp Pendleton.

An enthusiastic naturalist and hunter, General Erskine had built fish ponds, cover for game, and "grazers" where birds can drink water and hide safely from such predators as hawks, foxes, and bobcats. In his jeep he sent me on a bone-breaking, above-the-clouds mountain ride with his aide, Lt. William F. Doehler, who carried a carbine in case deer tried to kick us, coyotes tried to chew off our tires, or bobcats should jump into the jeep.

Wild animal signs and tracks were everywhere. Once we saw crows and coyotes devouring a sheep. Doehler is a born Nimrod. So is the General. Why ask, then, why Doehler was the General's aide?

Reserves, Too, Are Trained and Ready

Maj. Gen. M. H. Silverthorn, former director of the Marine Corps Reserve (he became Assistant Commandant of the Corps last July), told me how ready to fight his men are too. In 1950 the Reserve launched the greatest training program in its postwar history.

Until interrupted by the Korean War, a high light of this 1950 program was the airlift. Last year transport squadrons of the regular Marine air arm lifted more than 8,000 ground reservists to and from training locations without a single accident. That operation was expanded to transport about 12,000 by air.

When World War II broke, there ceased to be any difference between reservists and regulars. Both fought heroically. By V-J Day, reserves made up more than 70 percent of all Leathernecks in action, including more than 18,000 women reserves.

Before Korea, 125 separately administered units of the Organized Reserve were training in 119 cities of the United States and Hawaii. Of these, 100 units made up the ground component, manned by more than 34,000 officers and men. They trained at least one night a week and two weeks each summer. About 37 more such units were to be set up this year.

Today, all the Organized Reserve battalions are on active duty.

Our Marine Air Reserve now consists of 30 fighter and 11 ground-control intercept squadrons based at 25 naval air stations throughout the country. I lately watched a squadron of Corsairs training at Anacostia Naval Air Station, in the District of Columbia. These fly boys—civilians, use their vacations to practice with their planes.

"Our yearly training is held at nine regular Marine bases on both coasts," said General Silverthorn. "All these men are ready to fight at the drop of the hat."

In the late war some 18,000 women joined the Marines, mostly as clerks. Many worked as weather observers, control tower operators, parachute riggers, link trainer instructors,

Marines Cover a Korean Road with Bazooka and Machine Gun

These [illegible] or not on transport to present a target. One man also [illegible] while a companion [illegible] cover.

and radio operators. Some served as cooks and mechanics. Literally, these latter worked from "soup to nuts." None fought.

Tireless, capable, efficient, these women released enough men to form a whole new division of fighting Marines. Their motto: "Free a man to fight" (page 667).*

Director of Women Marines is Col. Katherine A. Towle; she holds degrees from the University of California, where she was formerly assistant dean of women. Like her subordinate officers, she is a regular Marine, enjoying all the privileges, allowances, pensions, etc., that male officers enjoy.

"But marriage is a problem," said one. "We can marry, sure; we can even carry a husband as a 'dependent,' if he can't support himself. But neither we officers, nor the enlisted women may have children born while we're in service. The only children we're allowed to have, and hold our commissions, are children over 18. And you can't give birth to an 18-year-old baby!" she said laughingly.

You think of Brady's famous Civil War pictures when you run through the Marine Corps' astounding Pacific war photographs, made by its own combat cameramen fighting the Japs. It's a veritable pictorial history.†

Dogs Used to Carry Messages

Dogs added much to the pictorial history of [illegible] used at detecting an enemy's presence, served as "alert" dogs with patrol and outpost units. German shepherds were used to carry messages.‡

Dropping their cameras, Marine photog-

* See "Women in Uniform," by La Verne Bradley, National Geographic Magazine, October, 1943.

† See in the National Geographic Magazine "We Fought with Photographs," by E. Burton Cubbon, September, 1944; and "Aerial Color Photography Becomes a War Weapon," [illegible] Air Force H. H. Arnold, June 1944.

‡ See, in the National Geographic Magazine, "Uncle Sam's War Aliens Too," by [illegible], January 1945; and "Hear Lou Jones Up!" by Frederick Simpich, January, 1944.

"If It Wasn't Rugged, It Wouldn't Be the Marine Corps!"

[illegible]

[illegible] raiders [illegible] New Georgia [illegible] of an unknowing Jap, then set down [illegible] rifle and shot the Jap.

Recruits [illegible] from the ranks of [illegible] photographers, these men knew all about making pictures of ball players [illegible] into second base, chorus cuties [illegible] their [illegible] and waving divorce [illegible] or politicians [illegible] had run commercial studios or [illegible] photo [illegible].

[illegible] they had to [illegible] their [illegible] first, the hard way. They [illegible] darkrooms [illegible] tanks [illegible] acid chemicals, and sausage casings [illegible] developing tanks.

[illegible] were killed when Capt. [illegible] a movie star led men of [illegible] photo unit in the assault on Tarawa. They worked from [illegible] foxholes, trees [illegible] [illegible] got 900 useful pictures and [illegible] feet of revealing movies.

In the night T/Sgt. Norman Hatch rode [illegible] on the [illegible] of a landing craft [illegible] 400 [illegible] good reef [illegible] everybody [illegible] board [illegible] His 35-mm. camera [illegible] hell high above water, and his rifle in the other, it took Hatch 15 minutes to make the [illegible] walk of his life.

Jap bullets [illegible] behind with the shooting [illegible] more pictures [illegible] debris jammed his camera. [illegible] the emulsion on his film, so he burned the rest of it to keep it cool for future use.

Forward with the Flame Throwers

With [illegible] Glue F. Newcomb, Jr. [illegible] pushed ahead with the flame throwers. [illegible] behind a log they kept picturing the [illegible] Marines fell on them [illegible] their cameras out of [illegible] they fired their rifles [illegible].

* See, in the [illegible]

Marines Draw a Deadly Bead with a French Bazooka, Against a New Jerk Raider

[illegible]

[illegible] Marines [illegible] Navy [illegible] Marine Corps [illegible] today, in the use of air transport and [illegible] landing craft [illegible] heavy guns, and other equipment [illegible]

[illegible] Marines are all [illegible] for the place [illegible] and tents [illegible] all packed, [illegible] landing craft [illegible]

[illegible] ready to start on short notice for the docks at San Diego.

The Navy [illegible] transport [illegible] important [illegible]

[illegible] we have [illegible] Marine [illegible] Corps [illegible]

[illegible] would [illegible]

[illegible] said, "and its about [illegible] days [illegible]

[illegible] the plans are [illegible]

[illegible] Marine [illegible] Working [illegible] officers [illegible] all vehicles, supplies, etc., that are to be loaded, passed on [illegible] which they have to be loaded. To be sure, [illegible] loaded first, [illegible]

[illegible]

Where Tough Training Pays Off: Marines Dash Across Tarawa's Deadly Beach

[illegible] transport these World War II [illegible] Imperial Marines [illegible]

ship in reverse order. This is known as [illegible] loading.

This means each commanding officer will have his unit loaded in the sequence which will most easily let him carry out his orders. [illegible] are loaded on the same troops [illegible] which crate loads [illegible] marked with [illegible] in accordance with what [illegible] on the ship.

Every Man Knows His Job

To keep in form Marines practice at [illegible] in the loading and unloading of [illegible]. Even at boot camp ashore, in San Diego, they have a transparent plastic model of a Navy transport. Hence the greenest recruit learns [illegible] ship in [illegible] soon have to help [illegible] on each of its decks: hold, [illegible] room, cold-storage plant, antiaircraft [illegible].

[illegible] are getting to sea, every [illegible] man in the outfit knows just what his job is [illegible] and how to do it. [illegible] plans for quick [illegible] the Marine [illegible] [illegible] the decks [illegible] and Lee plant [illegible] dressings [illegible] If the Navy makes any change [illegible] conditions [illegible] ship, no matter [illegible] Marines are kept informed.

This all means that orders for embarkation can be issued, and the force started on its way to the docks, even though the ships themselves may still be en route to that port or getting fueled and provisioned.

That's what the Marine Commandant, Gen. Clifton B. Cates, means when he says the Corps is "ready, by or sooner."

[illegible] that [illegible] keep [illegible] ready.

In [illegible] with most of his [illegible] [illegible] Pacific, one of [illegible] "Lucky" Cates understands his problems and backs him to the [illegible].

For this Commandant from Tennessee has a record [illegible] that [illegible] even the Corps [illegible]. He led troops under fire at every echelon from platoon to division. His commands include a [illegible] company, in one of World War I's [illegible] battles; a battalion on the [illegible] of the Sino-Japanese [illegible] guard Shanghai's International Settlement in the [illegible] the First Marine Regiment at Guadalcanal [illegible] the Fourth Marine Division on Tinian and Iwo Jima.

Under such leaders the men of the Marine Corps go forth again [illegible] to fight their country's battles.

We Took the Highroad in Afghanistan

By Jean and Franc Shor

With Illustrations from Photographs by the Authors

REMOTE Wakhan! Some 700 years ago [illegible] border linked Orient and Occident. Great caravans of Marco Polo's time inched their way across its craggy peaks and crevasses. Today, by passed by modern transport, it stands virtually "out of this world."

But should the Communist drive for world power push south, Wakhan, a thin strip of no man's land separating Russia from Pakistan, lies like a gigantic tank trap across the most direct route to the riches of the Indian subcontinent (map, page 676).

A year ago the idea struck us: why not explore the ancient highroad on the rooftop of the world? We set our plans in motion, but met discouragement from all sides. It was barely possible that our proposed journey across prohibited military zones of Turkey and Iran might be arranged, we were told, but Wakhan was strictly taboo.

A number of scientists and explorers in recent years had requested permission to traverse the Wakhan corridor, but the Afghanistan Government had refused everyone. Even if permission were granted, the trip would be too dangerous, we were told. The tribesmen of the Pamirs were fierce and inhospitable.

We decided to go ahead with our plans anyway. We were well received in Ankara and Tehran and crossed Turkey and Iran without difficulty.

Then we went on to the capital of Afghanistan, Kabul, an up-to-date, progressive city with a population of about 250,000 (page 675).* Here we expected our romantic journey to come to an abrupt end. We were advised to present our request to the director of the press, His Excellency Syed Kasim Khan Rishtya (page 701).

"What magazines do you write for?" Rishtya asked. When I mentioned that Jean and I had recently done an article for the NATIONAL GEOGRAPHIC MAGAZINE, Rishtya smiled broadly.

"I am a reader of THE GEOGRAPHIC," he said, "and so is His Majesty the King. You couldn't have a better recommendation."

Indeed, we couldn't. Two days later Rishtya summoned us.

"His Majesty," he said, "has ordered an exception in your case. You will be the first foreigners in more than 100 years to make the full journey. The Minister of War will furnish a military escort, and I will send a journalist from my office as an interpreter."

We later discovered that one man had preceded us in the Wakhan traverse. H. W. Tilman, English mountain climber, in 1947 tried to cross the northeast tip, but the Kirghiz arrested him and took him down the corridor to Faizabad. Being under arrest, he had little freedom of observation. We were the first Westerners since the time of Marco Polo to explore fully the entire length of the corridor.

A Visit with the King

We tried to express our gratitude, but Rishtya waved our thanks aside. "His Majesty will also receive you for an interview at his palace at Paghman. There you may photograph him and his son, Prince Nadir Shah."

Mr. Rishtya drove us to the palace, where we had a friendly chat with His Majesty Mohammed Zahir Shah. The King is well above medium height, slender and handsome, with a lean face and piercing eyes (pages 674, 682). He pointed to the current copy of the NATIONAL GEOGRAPHIC MAGAZINE on his desk and said, in perfect French, "I look forward to its arrival every month. I know of no better way to learn about the other peoples of the world."

The next two days were a whirl of last-minute preparations. Finally we struck out in a rented station wagon for Faizabad, capital of Badakhshan, with Ghulam Hazrat Kashan, the young journalist from Rishtya's office (page 681).

After a two-day trip over poor roads, we reached Faizabad, where we met the governor of Badakhshan, Mohammed Sawar Khan. He explained we should have no difficulty traversing the Wakhan because the snows would not come for another month. He said he would provide us with riding horses and pack animals, as well as military escort.

It all seemed too good to be true—and, as it turned out, it wasn't true. But that night we went to bed in high spirits, believing for the first time that we were going to succeed where so many had failed.

We spent the following two days preparing

* See, in the NATIONAL GEOGRAPHIC MAGAZINE, "Back to Afghanistan," October, 1956, and "Afghanistan Makes Haste Slowly," December, 1956, both by Maynard Owen Williams.

Afghanistan's King Authorizes the Americans' Trip Through Forbidden Wakhan Corridor

His Majesty Mohammed Zahir [illegible] National Geographic Magazine, keeps [illegible] in Kabul [illegible] War Minister [illegible] Mohammed Daud Khan [illegible]

for the next lap of our journey. The governor insisted we should want Badakhshani costumes, since much of our trip would be along the south bank of the Oxus River, in full view of the Russians on the other side. So we shopped in bazaars for long-sleeved, ankle-length [illegible] chapans, the turbaned [illegible] and hand-knit stockings, [illegible], hats, and gloves.

For the governor's [illegible], Mohammed [illegible] suggested that it might be advisable for us to purchase our own horses in Faizabad and sell them at the end of our journey. [illegible] After all, he [illegible] the [illegible] of the Government [illegible] horses and [illegible] would be furnished by the Army. The only money we would need [illegible] would be perhaps [illegible] afghanis, about [illegible] a day. I kept [illegible] afghanis and [illegible] the rest of our currency to a friend in Kabul.

The next day we met Cadet Sayed Rashid, who with two young soldiers was to be our [illegible] escort. Cadet Rashid was a [illegible] young man with a [illegible] look, a [illegible] hand [illegible], and [illegible] shoulders. We all [illegible] into the [illegible] station wagon and started on our adventure.

For 40 miles the road climbed steadily through a narrow valley, following the [illegible] Kokcha River. The road is new, only [illegible] the Kokcha and the [illegible] Our progress [illegible] the fact that the telephone line [illegible] poles right down the middle of the highway.

A [illegible] wall of rock [illegible] marked the end of our travel by motor

Kabul Buses, Home from Peshawar and Khyber Pass, Unload Tall, Turbaned Passengers

[illegible]

Men were [illegible] with [illegible] and our [illegible] was [illegible] transferred [illegible].

[illegible] after dark we reached a [illegible] caravansary [illegible] and had an excellent dinner of [illegible] chicken and rice [illegible]. In Kabul [illegible]. But [illegible] Afghan [illegible] passing up the [illegible] their [illegible] it into the [illegible] into a [illegible] and passing it [illegible]. We [illegible] our own [illegible].

[illegible] days to be [illegible] wilderness of the [illegible] world beyond the reach of [illegible] civilization. A little [illegible] brought [illegible].

Suddenly I was brought [illegible] upright by the [illegible] of [illegible]. A second [illegible] feet from our head [illegible] the [illegible] of [illegible] green. It was the [illegible]. The [illegible] was [illegible] night.

We were in our [illegible] saddles for 15 hours that day. Several times we had to lead our [illegible] across swaying [illegible] of flat [illegible] laid across thin [illegible]. [illegible] were friendly [illegible]. Their houses [illegible] low [illegible] with [illegible], their [illegible] and the [illegible] field. Yet in every village we were [illegible] for [illegible]. The villagers [illegible] at [illegible] the first Western women to visit this [illegible] of the world.

[illegible]. We had [illegible] as [illegible] the [illegible]

Afghanistan's Wakhan Corridor Touching China, Insulates Pakistan from Russia

[illegible]

[illegible] Two hours [illegible] and hungry [illegible] mosque.

The next morning [illegible] the rental of the horses which [illegible] the previous day was 15[illegible] $11. I told him of Wajid's [illegible] the Government would pro[illegible] tation. Kosban knew [illegible] was most embarrassed, for [illegible] to Wajid's advice. I now had less than 1,000 afghanis. Obviously we would run short on a 12- to 15-day journey [illegible] 0 afghanis a day.

As we waited for fresh [illegible] herself with a little mending, [illegible] to multiply 150 by 15 and [illegible] than 1,000. We [illegible] rival of three ragged teen-age girls with matted [illegible] to their home for tea.

We found two families of about 15 people living in a tiny smoke-filled hut, with no furniture. An ancient iron kettle steamed [illegible] fire in the center of the floor. We [illegible] presented the elders with [illegible] the children fruit [illegible] They popped them into their mouths [illegible] and, before [illegible] could intercede on my morning that [illegible] removed, most of the [illegible] swallowed them.

Place Where the Salt Ends

Ultimately fresh horses were procured, and we started out for Ishkashim. The trail winds along a pleasant valley at an altitude of about [illegible] feet, with barren mountains rising [illegible] 2,000 feet on either side. Numerous [illegible] provide ample irrigation, and the thin soil produces wheat, barley [illegible] few vegetables.

Zarkhim, where we stopped for lunch [illegible] No salt is found in the area, and inaccessibility and poverty have discouraged imports; so

An Elderly Moslem Prays a Set Salaam His Index Fingers

[illegible]

for centuries to people of the Wakhan have lived without salt [illegible] diet consisting [illegible] and [illegible] potatoes with no wheat.

Few villages in the world are more beautifully situated than Ishkashim. It sits along a [illegible] overlooking the silvery ribbon of the Oxus, surrounded by green fields and by [illegible] stone capped peaks. Russian [illegible] to the north, [illegible] a few miles [illegible]

The telephone line from Ishkashim ends at [illegible] and I asked [illegible] to have the governor approve a $100 check by telephone. The governor gladly authorized the village treasurer to give me the legal price of exchange, and we went to bed convinced the problem was solved.

The next morning however, the village [illegible] the governor [illegible] and a brilliant idea.

[illegible] photographed me [illegible] with Mohammed Reza Shah Pahlevi. We hunted over the photograph, and in five minutes had the money.

Said Keshani: "The treasurer rules that if you are a friend of the Shah of Persia you must be good for $100."

U. S. S. R. 200 Yards Away

From Ishkashim our path [illegible] the Russian border, so we [illegible] Afghan [illegible]. The valley of the Oxus is less than a mile wide. The river [illegible] 200 yards [illegible] Soviet Turkestan. Russian [illegible] are plainly visible on the [illegible] bank. An [illegible] the Russian bank and frequently [illegible] right of the Afghan side, where [illegible] card events.

Ordinarily in such a remote area [illegible] have little meaning, but [illegible] practically no intercourse between the two [illegible].

[illegible] were always [illegible]. Our escort [illegible] to their [illegible] and when we [illegible] armed man is walked [illegible] around [illegible] little but [illegible]

[illegible]

In Ancient Times This Great Road Commanded All Movement Along the Oxus and Turnish the Wakhan

Toiling Yaks and Horses Struggle Up a 35-Degree Grade in Pamir Pass. The Oxus Twists Through Its Gorge Far Below

yards from here," he whispered. "We are afraid the Russians might cross the river at night and *catnap* you."

The Russians didn't "catnap" us, but the bedbugs did. They ignored our DDT powder and swarmed in by the thousand.

The next day we lunched at Urgand, a little village at about 9,000 feet altitude. Finding a heavy crop of wheat that high up amazed us. This grain takes only 40 days from planting to harvest. It produces a heavy yield, and is apparently quite impervious to cold. We brought samples of the seed back to Washington, where the Department of Agriculture is experimenting to determine whether it can be grown here (page 687).

The Blessing of the Prophet

By noon the next day we reached Khandut, the administrative headquarters of the Wakhan district. There we met the judge of the Wakhan, a 70-year-old gentleman with a magnificent white beard.

He greeted us warmly. The Koran, he explained, urged all Moslems to travel widely, to know more of the other peoples of the earth, and ours was thus a mission which undoubtedly had the blessing of the Prophet.

We reached Qala Panja, the fort of the Oxus, at dusk (page 678). The garrison consisted of about 50 soldiers quartered near by, captained by an officer who wore a United States Army blouse and Afghan trousers tucked in Russian boots.

The garrison commander had disturbing news of an incident at the Afghan-Chinese border. The Afghan Kirghiz, he reported, had been fighting with tribes on the Chinese Turkistan side of the border during the past few days, and the border might be closed. Koshan and Cadet Rashid made tentative suggestions about turning back, but we announced we would go as far as possible.

In four days of travel from Zemak to Qala Panja we had climbed only about 500 feet, from 8,500 to 9,000. But after leaving the fort we turned sharply upward. For hours we wound up a rocky cliff, our horses picking their way carefully along a narrow ledge.

We rode hard all afternoon, crossing one ridge of mountains and dropping down once more to the rocky river valley. As dusk fell, Rashid began to look worried. There was no trail, only a broad valley full of great boulders, crisscrossed by foaming mountain streams. We plodded on for two hours after dark, our horses stumbling and slipping on the stones. Rashid would not admit he was lost. But he was, so we called a halt for the night.

Our bedrolls were with our baggage animals and the soldiers, who had gone on ahead of us, so we prepared to sleep in our clothes. Rashid informed us that the country was full of wolves, so we took turns standing guard.

At 3 I awoke, to find Rashid soound asleep and the horses starting restlessly. Jean awoke and insisted on guarding for a couple of hours too, so I dozed off.

Half an hour later I was awakened by a blinding flash and the howling of an animal obviously scared to death. I ran to Jean's side and found her holding our flash gun. A wolf had attempted to attack our horses, and Jean, having no more lethal weapon, had fired a flash in his direction. It did the trick.

One of our soldiers found us shortly after dawn. He had gone [illegible] searching for us. They had been worried because of the wolves. I smiled at Jean and explained that American girls were trained to take care of themselves around wolves.

Private Bath in Public

An hour's ride brought us to Khurat, where we slept for a few hours. When we awoke the villagers brought us tea and saddles bread and Jean went off with the women of the village for a bath in privacy.

"Privacy, indeed!" Jean said later. "The women brought her a pot of warm water, but the room unfortunately had no door. So off they went, looking into every hut, until they found one that did have a door. The girls evicted a protesting gentleman, brought in the water, and departed. Jean undressed and started to bathe. A moment later, one of the older women returned, squatted on the floor, and stared at Jean. Before long, half the female population of the village was watching.

They insisted on helping Jean dress. They had never seen laced boots before and kept wrapping the laces around Jean's legs, Afghan fashion. The zipper on her jacket fascinated them, and they took turns zipping it.

"My soap delighted them. One asked for a piece of it, and I smiled a 'Yes.' She cut off a chunk, and so did all the others. I ended up soapless, even had to borrow a piece back to wash my dirty clothes. I finally finished dressing and returned to find Frank writing in my log that I'd gone off to 'bathe in privacy.' Men!"

I asked Koshan to find out if we were the first Americans these people had seen.

"They have never even heard of America," he said. "They never see foreigners."

We left the friendly village at noon and worked our way over rugged trails until dusk. Jagged mountains shaded the trail, those in Pakistan towering over 20,000 feet. Here we

Juan Sisoy, Crossing the [illegible] on Dalar Sang, Stands in the Paradise, Roof of Asia

* Mohammed Zahir Shah, Tailored King, Wears Karakul Cap and Parisian Tie

* Afghan Prince Gets a Camera Lesson From Prince Shah

Bodybuilders Drum Dancers Celebrate Afghanistan's Independence Day

Dazzle Drummers, Dancing to Reed Pipes Spur and Drum and They Drop

Kirghiz Maids Milk Shaggy Yaks—Snow-clad Peaks Overlooking the Herd's 15,000-foot Pastures on the Pamir Plateau

[illegible]

Mr. Kassim Receives an Ear Source of a Ruined Port

Welcome Stranger!

A Sound Workman's Shoulders a 240-pound Bundle Which He Intends Purchasing Cordelia's Brooch

Log Bridge, Paved with Twigs and Stones, Spans Like a Tightrope Creeks Like an Ocean

No Rocker, No Parents—Kirghiz Mothers Lead the Simple Life

[illegible]

Sheer and Fourpds Compete Normal Boots with Paratrooper Leather

[illegible]

Cut In Summer Water in Winter For Next Makes a Small Horse

Women Weaving Strings for the Nets and Milking the Herds. During the Bride's Feast Work While the Men Pass

Mounted Men, Yaks Carry Afghans Across 14,000-foot Pamir Pass

Up and Up the Pamirs Ponies Labor; Riders Dismount to Spare Them

Lambs of Fragrant Wormwood Break the Plateau's Grassy Monotony at Bezel Gorge

In a Silent Empty No Man's Land the Expedition Rides Past Towering, Nameless Peaks

Across Oxus, the Ancients' Oxus River, Gathers the Pamirs' Snow Waters and Carries Them 1,500 Miles to Russia's Aral Sea

Shar and His Sahibs Cross Near Dehli Sang's Ice Stream

Shar Represents a Yak for a Bench Round Crossing of the Oxus

met our first yaks, great pompous animals with shaggy coats, sure-footed as goats on narrow mountain paths. We spent the night at Nuras, a tiny village at 10,500 feet, sleeping near a hot bubbling mineral spring (p. 686).

Pack yaks replaced our baggage horses the next morning. For four hours we forded the Oxus, crossing eight separate streams in the mile-wide river bed. The water was swift and icy cold, and the animals staggered and struggled to keep their feet in the raging current. The water frequently came far above our stirrups, and we balanced our feet on our horses' necks.

An hour beyond the ford we came to Sarhad, the last military post in the Wakhan. The commissar greeted us warmly and led us to a pleasant grove on a mountainside.

Eating Fresh Peas Shocks Natives

While Jean napped, I took a stroll through the village. To my amazement, I found a garden full of green peas. It had been days since we had seen green vegetables. I bought peas, yak butter, milk, and a chicken, borrowed a pan, and returned to our grove. I built a fire and went to work.

When Jean awoke an hour later, our lunch was ready—fried chicken, fresh peas, toasted Afghan bread and butter, and a cup of cold milk. The children were horrified to see us eating green peas, and warned us, in sign language, that they would make us ill. Koshan later revealed that these people never eat fresh peas. They dry them, pound them to flour, and mix them with wheat for bread.

The commissar and Mr. Koshan returned with bad news. The earlier reports of border warfare were true. From Sarhad to Mintaka, the Chinese border post, the trail leads across the Pamir Plateau, at an average elevation of more than 15,000 feet. There are no villages on the way, only a few settlements of wild Kirghiz tribesmen, contemptuous of any authority. Even the commissar, in two years at Sarhad, had never ventured onto the great plateau. He warned us the journey would be difficult and dangerous.

If we wished to risk the trip, he would help us. But he stressed the danger and suggested that we cross Baroghil Pass southward into Pakistan. I left the decision to Jean. She knew the dangers and knew her own strength. Did she want to try the journey over the Pamir (Daix) Pass?

"With that fried chicken under my belt I can go anywhere," she laughed. "Why are all you men sitting around talking when we should be packing?"

The commissar smiled and shook her hand.

"The commissar says he is proud to know you," Koshan translated. "He will come with us himself."

We started out at dawn the next day. The trail from Sarhad rises straight up, over patches of shifting shale and around rock chimneys. In some places the path is literally stuck against the cliff—rocks wedged into cracks in the stony wall, more rocks piled on top of them, and a thin covering of brush. Few sights are more disappointing than to see daylight *through* the trail you are traveling.

The Pamir Pass is a series of 14,000-foot crests, interspersed with 10,000-foot valleys. Up and down we labored, leading our horses and prodding our gasping yaks. The commissar kept pushing us forward. We had a dangerous bridge to cross, he remarked, and must make it before dark (page 692).

We reached the bridge at 5 o'clock. It was about 80 feet long, with a drop of 50 feet to the raging river. We crossed one at a time, leading our animals, while the structure swayed and creaked. One yak lost his footing, and the bridge lurched frightfully. But we made it (page 688).

Fairyland by Moonlight

We were soon on our way down the trail. The mountainsides were masses of wild flowers: pink wild roses, showy daisies, candelabras, buttercups, blooming thistles, and great patches of edelweiss. The sun went down and a full moon rose, bathing the whole scene in an unreal, golden light. It was fairyland.

As we plodded on, hour after hour, men and animals reached the point of exhaustion. By 9 o'clock we were ready to sleep on the rocks. Mr. Koshan asked the commissar when we would stop.

"He says there is a Kirghiz camp a few miles ahead," he translated. "We may reach it by midnight."

I looked at Jean. She bit her lip.

"Jeepers," she breathed. "Why did I make that foolish speech back at Sarhad? Now I've got to keep up."

We reached the camp an hour later. As we halted in front of the two yurts (circular tents) which appear on the map as Langar, the commissar's horse dropped dead.

We slept that night in a felt-walled Kirghiz yurt, with a dozen odd members of two Kirghiz families. A fire of yak dung burned on the dirt floor. Despite the 12,000-foot altitude, we were warm and comfortable. In the morning we checked our pulses to see how we were reacting to the extreme height, and found both our hearts beating at 110 a minute; otherwise, we noticed no ill effects.

Knife in Mouth, a Kirghiz Skins a Sheep for Roasting in the Herdsmen's Honor

[illegible]

[illegible]

Getting Acquainted with Pamir Kirghiz

[illegible]

[illegible]

[illegible]

Tea and Chess by Lantern Light Enliven an Evening on the Faizabad-Zebak Road

[illegible]

[illegible] was reluctant to have us take pictures [illegible] He [illegible] [illegible] [illegible]

[illegible] and I [illegible] [illegible] [illegible]

We [illegible] [illegible] We were bowed into an enormous [illegible]

Brightly painted tin trunks lined the walls, and in one corner stood a dozen teapots of [illegible]. An iron tripod topped the [illegible] [illegible] [illegible]

[illegible] [illegible] They [illegible] [illegible]

[illegible] our honor, the conference adjourned for din

Cross-legged in a Kirghiz Tent, Franc Sher Pays His Life in Ruhman Qul's Care

When [illegible] blocked the American [illegible] eated Ruhman, the [illegible] border [illegible] 'I will be [illegible] man of his word. But [illegible] reputation as a [illegible]

[illegible] We asked Ruhman what was being [illegible], but he insisted it was only a [illegible]

[illegible] the two messengers returned bringing some [illegible] in huge [illegible] for hats. They joined the whispering parley. [illegible] and I dozed off, full of worry.

We awoke to find our worst fears realized. Over [illegible] tea Ruhman drove [illegible] land. The Kirghiz [illegible], had been [illegible] for two weeks with tribes on [illegible] side of the border. The area beyond our encampment was a no man's land, [illegible] men had been killed there in [illegible] The Kirghiz would not guarantee our safety beyond Bozai Gumbaz. He [illegible] we turn back.

[illegible] I held a conference of our own. We had [illegible] determined to reach the Sinkiang border. We were only [illegible] days from our goal. It was obviously dangerous to go on, but we had known we might face danger. We would go on.

I told Ruhman of our decision. He was miserable.

"There is great danger," he said. "These tribesmen have no respect for life, not even that of soldiers [illegible] government officials. Even if you and Mrs. Sher are willing to [illegible] the chance, you must think of [illegible]. Remember, [illegible] we have an [illegible] Afghan [illegible] [illegible] there might be shooting. It might come at any moment."

Ruhman Qul Accepts a Trust

I [illegible] considered it in [illegible] way. After [illegible] persuasion he agreed to accompany me while I talked to Ruhman Qul, the Kirghiz leader.

Ruhman Qul speaks Persian, Russian, [illegible], Urdu, and Turki in addition to the Kirghiz dialect, and he can read and write in Persian and Russian. He can even spell out a few words of English. He has a frank [illegible] and is [illegible] to be trusted.

"We have traveled more than 1[illegible] miles to reach your [illegible] and here, [illegible] two days [illegible] we face disaster. Our [illegible] will go [illegible]. We [illegible] to leave the [illegible] behind. We [illegible] our lives [illegible] in your hands. If you will [illegible]

A Friendly Gesture Transforms an Ugly Scowl Into Through Wakhan Corridor
Mr. Shor in Kabul, confers with Syed Kasim Khan Kuntwa, Afghanistan's press director (page 673).

with the Chinese border, we will pay whatever you ask."

The tall Kirghiz smiled and patted both his guns on hips.

"I accept your trust," he declared. "I will be responsible for your lives. I can accept no pay. You are our guests."

Receipt for Two Shars

Keshan was not happy about the arrangement, since he felt personally responsible for our safety. We agreed to give him a letter absolving him of all responsibility. But first he wrote a half page of Persian [illegible] and presented it to Rahman Qul. The Kirghiz chieftain read it carefully, then signed it. Keshan tucked it into his [illegible].

"What was that?" I asked.

"A receipt for the two of you," Keshan said. "You are now out of our hands."

We [illegible] Rahman Qul again to let us pay him. He refused. Then Jean had an idea. From her luggage she took a lapel watch and pressed it into the Kirghiz's big hand.

"Tell him," she said to Keshan, "that it is for his wife."

With a smile and a bow of thanks the chief accepted the gift.

We had a pleasant farewell dinner with Keshan, Rashid, and the commissar. We had covered some rough ground together, and the next morning, when we said good bye at dawn, it was with genuine regret.

Our new guide, Tilub Waldah, looked like a real desperado—tall and slender, with drooping handlebar mustache and brilliant black eyes. With him came two yak pullers.

Rahman Qul came to see us off, and he and Tilub Waldah huddled for a long whispered conference. Then we were off across the grassy plain. The yak pullers prodded their lumbering animals into a rapid gait, and we were soon out of sight of the Kirghiz camp.

An hour from the camp Tilub Waldah pointed out our path in sign language, and indicated he would ride the flank to watch for danger. He loped off across the plain, climbed a low ridge, and disappeared.

Specks in Infinity

We had an uncanny feeling of being remarkably little and alone. The great emptiness of the Pamirs spread around us, punctuated by jutting peaks. There was no sound except for the steady pace of our horses and the measured breathing of the yaks. Jean and I drew closer together, riding hoof to hoof. The miles fled away as we rode on into that incredible silence (page 679).

Carefully we scanned the crest of the flank-

[illegible] Hudson Carrying Cross a Tattery House Sponsored [illegible]

Paved with Loose Stones, the Narrow Trail Threatened to Slip into the Ditch

Journalist Kochan, who follows page Sixty, handles his mule with fun thereby [illegible] against the [illegible] "We should have [illegible] feet above the river. At this [illegible] the caravan trail [illegible]

ing hills but not once did our outrider appear. The yak pullers plodded silently behind us; the empty distance stretched ahead. Somehow the feeling grew on me that we were the only people left in the world, that the civilization of skyscrapers and automobiles was all a dream. There was not only else nothing else in the world, just the two of us.

As if in answer to my thoughts, Jean reached over and took my hand. Until dusk we rode hoof to hoof and hand in hand, two tiny specks in an infinite space.

Tilab Wakiah rejoined us at dusk. We camped near a little stream, brewed tea, and shared a flat wheel of Kirghiz bread. Our Kirghiz friends stood watch while we slept.

The next day passed in the same fashion. Hours of silent progress through a silent land. Then, a few hours before sundown, one of our yak pullers pointed to a notch in the mountain wall some two miles ahead of us. "Wakhjir," he said. We clapped each other on the back with joy. The Wakhjir Pass—end of the Wakhan. We had made it, first foreigners in modern times to reach China by this ancient route. We kicked our tired horses into a trot.

Suddenly, less than a mile from the pass, a low, clear whistle sounded through the evening air. We stopped, puzzled. Our yak pullers signaled us to dismount. Still mystified, we complied, and the Kirghiz drugged all the animals into a little gully and motioned to us to join them.

In a few minutes Tilab Wakiah joined us. At his signal we crept around a turn of the gully, and he pointed upward to the crest of the pass. Silhouetted against the darkening sky were three Chinese Turkistan soldiers. We looked questioningly at our guide. We tried to explain to Tilab Wakiah that the soldiers would be friendly. He shook his head. He pointed to them, then toward himself and us, and drew his forefinger across his throat. There was no mistaking his meaning.

We sat quietly beneath the bank until dark. Then we mounted, and for 10 hours we rode across the Pamirs, halting only to let our dead-tired horses rest and graze. At dawn we stopped for a few hours' sleep.

When I awoke I tried to figure where we might be—possibly some 15 miles east and a little south of our starting point.

By now we were scared to death. I tried to tell Tilab Wakiah we wanted to return to Rahman Qul's camp. Whether he understood I shall never know. He simply shook his head and pointed south to a wall of mountains.

Before noon we again reached the Oxus, here confined in a valley so narrow that we had to ford the torrent half a dozen times (page 693). We ate the last of our Kirghiz bread and rode, endlessly up the mountainside, leading our horses over shifting masses of shale which constantly gave way beneath their feet.

Toward evening we emerged in a lush, green mountain valley. A single yurt stood in the grassy vale. A fierce-looking Kirghiz, an ancient rifle cradled in his arms and a long knife hanging bare at his side, stood beside the low door. Tilab Wakiah spoke to him, and we heard the name "Rahman Qul" half a dozen times. Finally the Kirghiz signaled us to dismount and led the way inside.

All the Witch Wanted Was Everything

The interior was dirty and barren. A baby sat on the ground near the fire, and as we entered, a little girl came from behind the reed partition. Behind her came the most unpleasant-looking woman we have ever seen, a wrinkled hag with the face of a witch. She greeted our reluctant host with a blast of invective. Even the magic name "Rahman Qul" had no effect. There was no question about our being welcome—we weren't! But there was no place else to go, so we sat down with stiff smiles and warmed ourselves.

I offered everyone cigarettes, and the lady demanded the rest of the pack. I lit her cigarette, and she demanded the box of matches. We washed, and she snatched our soap. Jean put a soothing cream on her face cracked and swollen from exposure, and our hostess demanded the rest of the jar. We opened tins of meat and cheese from our vanishing emergency rations and shared them. Grandmother insisted on the balance of our stock. She didn't get it.

Avarice sometimes brings its own reward. I took a flash picture of the children and spotted the still-hot bulb on the floor. Our acquisitive friend ignored my warning and snatched up the red-hot bulb, acquiring a slight burn. When I treated her hand, she demanded the rest of the ointment.

After our meager supper, Jean and I crawled into our sleeping bags and lay talking softly. Things looked bad. We didn't know where we were, or where we were going. Our present hosts were obviously unfriendly, and the next ones might be worse. Our experience at the Sinkiang border had shaken us badly. Since we were traveling with the Kirghiz, anything that happened to them would undoubtedly happen also to us.

That night, sleeping at 17,000 feet, Jean was bothered by the altitude. Her heart pounded so that she could not sleep lying

Jean Sherr Learns About Vast Life from a Kirghiz Family in Danger

[illegible] Kirghiz [illegible] kept contain yak butter tea. [illegible]

[illegible] propped against the wall.

At dawn we broke an inch of ice from a little spring, washed, and made tea. Then came the final hour: Tolub Waldub took both [illegible] the night would take us on across the tower-[illegible] mountains. [illegible] our [illegible] people we knew about.

[illegible] mountain shoulder, still climbing, but now over walls of shale, slippery and dangerous. [illegible] in dusk we halted for a rest on a tiny grass-covered plateau.

Above us stretched a mile-long snow field, ending its steep ascent in a wall of white nearly 200 yards high. It looked almost impossible [illegible] but our guide informed us, with gestures, that it could be done later in the afternoon. [illegible] melting snow and ice made it dangerous. So we rested, sharing another tin of cheese and our last bar of chocolate.

For four hours we fought our way across that slippery frozen wall. [illegible] came the gurgle of running water.

[illegible] ruined, [illegible] rock [illegible] life [illegible] one we shall never forget.

Standing on Top of the World

The last few hundred yards were torture. We crawled on hands and knees, dazed by exhaustion driven only by the knowledge that we must cross the ridge and reach a lower altitude before dark. A night on [illegible] ridge could end only in death.

Somewhere we found strength, not only to move our own tired limbs but to drag the floundering animals behind us. Even the Kirghiz, born and bred on their high plateau, were gasping for breath. On we went, five yards at a time, lying in the snow and gasping between those brief advances. A few final steps, and we stood on top of the world!

We were on the crest of a great mountain range. All around us, as far as the eye could see, lay other mountain chains, their magnificent peaks punctuating the endless distance. Exhausted and gasping, we still could not take our eyes from the panorama of beauty.

For half an hour we rested and stared in awe. We were too tired to go on, but we had to go on. There was no trail ahead of us, only snow. Holding our horses by the bridles, we slid across the edge, floundering and slipping downward through the snow.

Two thousand feet below we reached an incline of shale, and worked our way crabwise down and across it. Long after dark we gouged a shelf out of the shale and slept through a flash blizzard.

Pakistan at Last!

Another day of sliding down shifting shale, still not knowing where we were bound. On we went, always down. Suddenly we rounded a narrow wall of rock and saw in a narrow valley far below us a square stone fortress, with the flag of Pakistan flying in the breeze.

Our guide pointed to the fort. "Kalam Hatchi," he said. I checked our maps and finally found it, formerly a tiny British outpost in the princely State of Hunza.

The tall Pakistani soldiers of the post spoke a little English and told us that the village of Misgar, five miles down the valley, had a guest bungalow. We hurried onward, and two hours later were warmly greeted by an English-speaking telegraph operator and the mayor. They were not pleased, however, to see our Kirghiz guides. We paid them generously, bade them a grateful farewell, and they started back for their Pamir homeland.

After a warm meal and a long night's sleep we got out our maps, plotted the course we had come, and assayed the results of our journey. We were still only a day's ride from the Chinese Turkistan frontier. It would not be difficult to organize a new caravan in Hunza and continue our journey. We had succeeded in our prime goal of traveling the Wakhan corridor from end to end—the first foreigners in modern times to make the journey from west to east.

Two discoveries were left for us. The first came when, plotting our route on our maps, we discovered that the final pass we had crossed was the towering Dehli Sang, more than 20,000 feet high! We had reached that great height without knowing where we were and without oxygen equipment of any kind (pages 681, 696).

The Legend of Rahman Qul

The second discovery left us a little surprised. It came the day after our arrival in Misgar. The mayor called on us.

"These Kirghiz men you came with," he said, "belong tribe of Rahman Qul?"

"Yes," we nodded. "Rahman Qul is a very good friend of ours, a wonderful man."

The mayor shook his head. "Rahman Qul very bad man," he said firmly. "He rob caravans, kill many people. Very bad!"

We stared in disbelief. And then he told us a few tales about our benefactor. Two years before, the mayor began, Rahman Qul and his tribe had crossed the Russian Pamirs. There they had robbed a caravan and murdered every man in it. Pursued by the Russians, they had fled into Chinese Turkistan and taken up residence near the border post of Mintaka.

Rahman Qul had become a close friend of the commander of the little Chinese border garrison. Less than a month before we met him he had invited the commander and his garrison of eight men to a lunch on a Mohammedan festival day. While the Chinese were eating, Qul's villagers had stolen into the tent behind them and murdered every man in cold blood, the mayor reported. They had looted the garrison of guns, ammunition, horses, and supplies, and fled across the Afghan border to resume residence on the Pamir Plateau.

"For many years this Rahman Qul murder and rob people," the mayor insisted. "Very bad man. Why he no murder you?"

I remembered the night we talked with Rahman Qul in his smoky yurt, high up on the great Pamirs.

"We put our lives entirely in your hands," I had said. And his answer: "I accept your trust."

"Why he no murder you?"

I looked at the mayor and shook my head. "I don't know." I looked at Jean. I could see she agreed with me. We didn't know. Probably we never would know. But to us, Rahman Qul would always be the man who saved our lives.*

* For additional articles on Afghanistan, Chinese Turkistan, Soviet Central Asia, and Hunza, see "National Geographic Magazine Cumulative Index 1888–1959."

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Articles and photographs are desired [illegible] The Magazine [illegible]

In addition to the editorial and photographic [illegible] years of field work to [illegible]

The Society's [illegible] the last [illegible] of the continents [illegible] crossed the Sahara [illegible] By [illegible] the [illegible] expeditions [illegible] that [illegible] these [illegible]

In Mexico, The Society and the Smithsonian [illegible] January 10, [illegible] of [illegible] This [illegible] Mexico City [illegible] Is [illegible] by 300 years [illegible] discovered [illegible]

On November 11, 1939, in a [illegible] jointly by the National Geographic Society and the U. S. Army Air Corps, the world's largest balloon, [illegible] took off to the stratosphere nearly a mile [illegible] results of [illegible]

The National Geographic Society [illegible] expeditions [illegible] and observed the polar ice cap of [illegible] from the [illegible] of The Society [illegible] of the sun.

The Society [illegible] operated with Dr. William Beebe in [illegible] and depth of [illegible] were measured.

The Society granted [illegible] was given by [illegible] in the [illegible] National Park of [illegible]

[illegible] the world's largest [illegible] and glacial [illegible] Yukon be [illegible] Washington [illegible] The Society and the Harvard [illegible]

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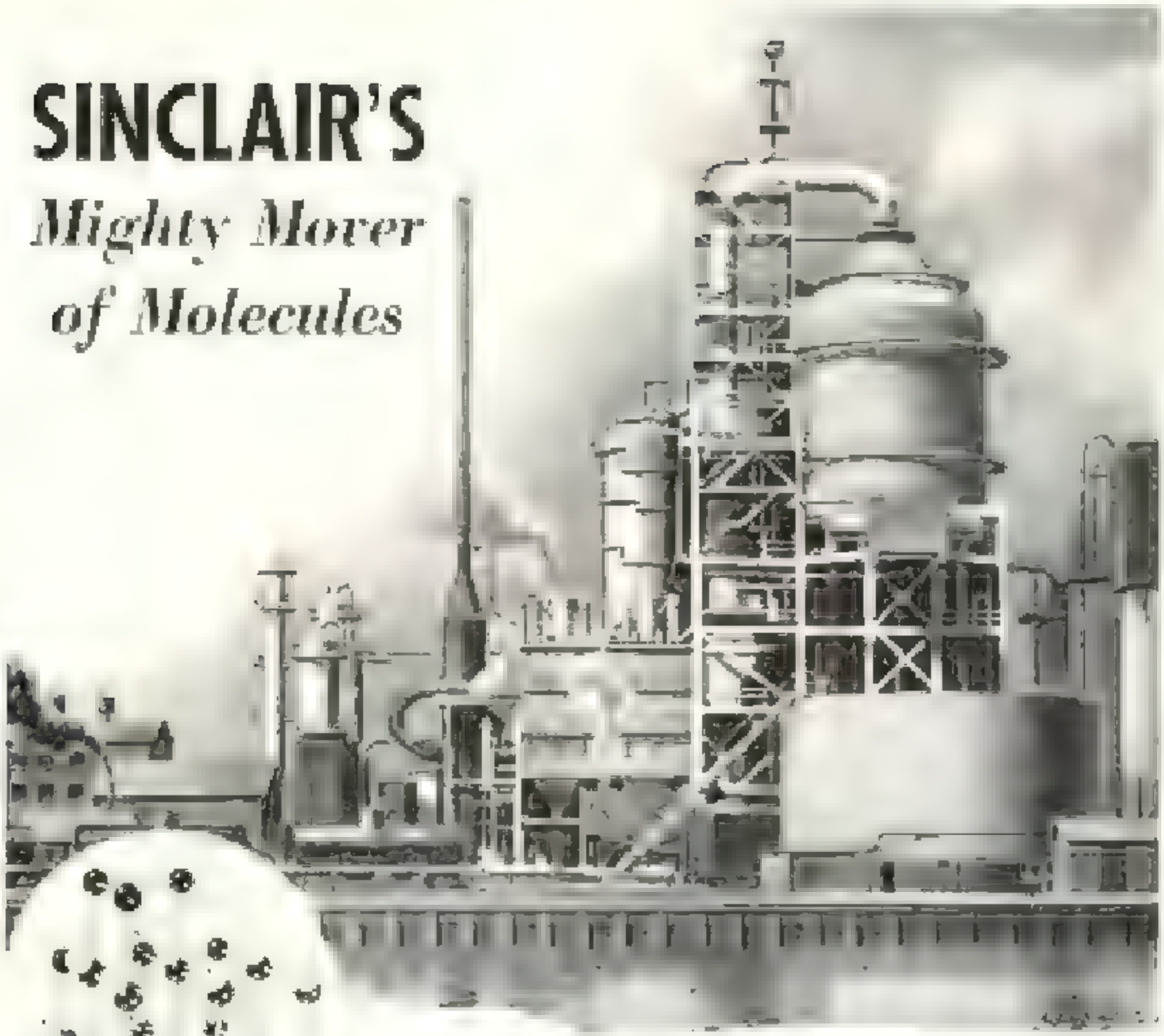

[illegible]

[illegible]

This [illegible] Fluid Catalytic Cracking Std., is a shorthand description of its method and purpose. It [illegible] the end result of millions of [illegible] engineering [illegible]

[illegible] its design was first tested on pilot plant scale at the [illegible]. A model of compactness [illegible] it has a capacity of a million and [illegible] barrels a day.

[illegible] plants [illegible] petroleum industry.

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Chicago & North Western has three RDC's in commuter service; the Baltimore & Ohio will soon have two and New York, Susquehanna & Western, four.

These varied uses to which RDC is being put cover almost every kind of service a railway passenger coach can render.

The general acceptance of the Budd all-stainless-steel RDC suggests that the development of railway passenger coach equipment may be headed in a new direction.

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Automatic Dishwasher [illegible]

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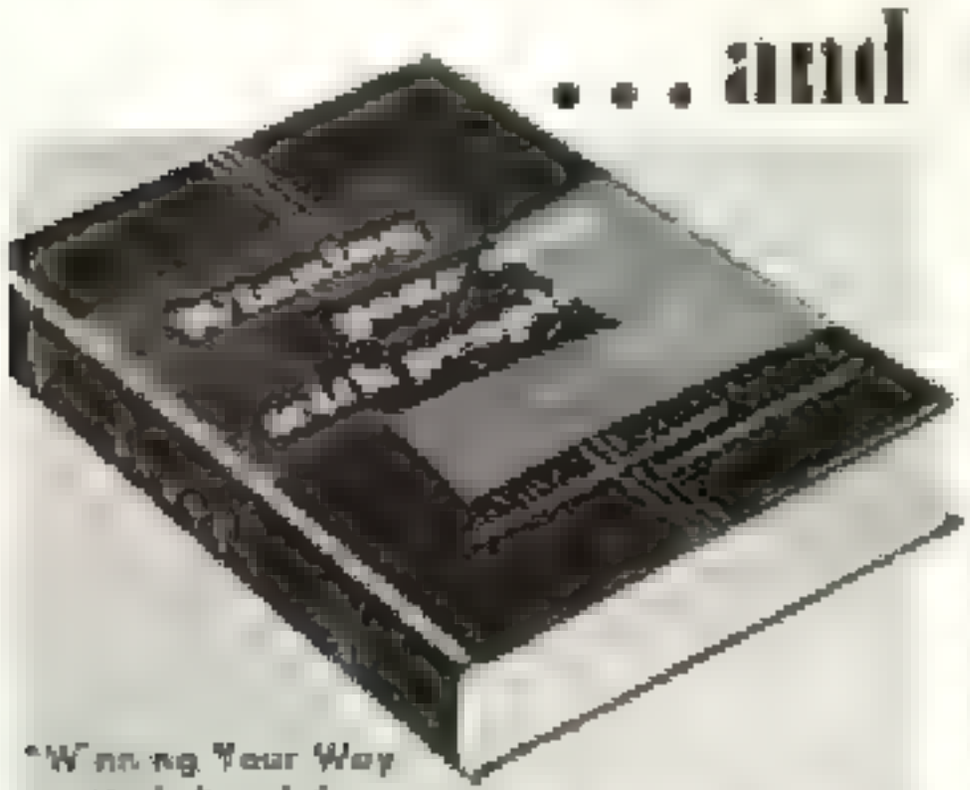

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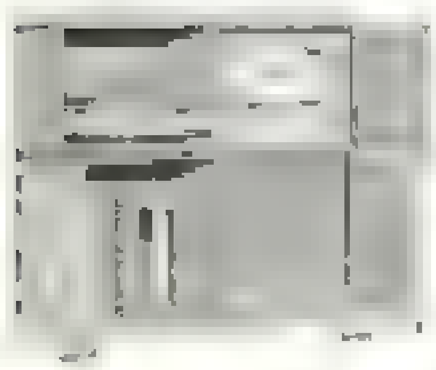
[illegible]

With [illegible]

[illegible]

Above, New Zenith [illegible] Console TV [illegible]



New Zenith "Tudor" Radio-Phonograph Console [illegible]

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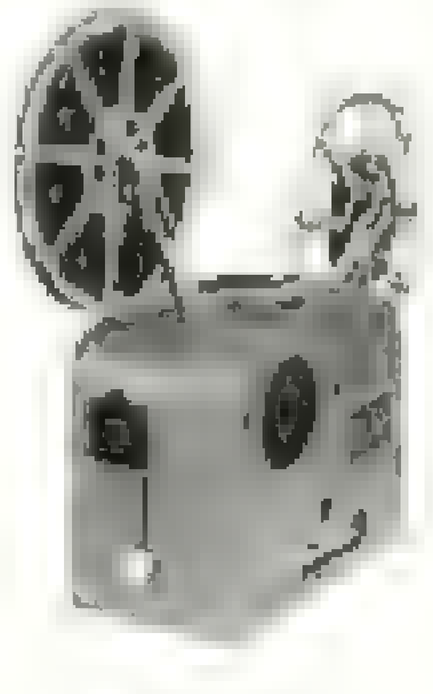
Cartoons
Hollywood releases
Films on [illegible]
[illegible]
[illegible]
[illegible]
Educational [illegible] [illegible]



FILMOSOUND

See [illegible] [illegible] $[illegible]

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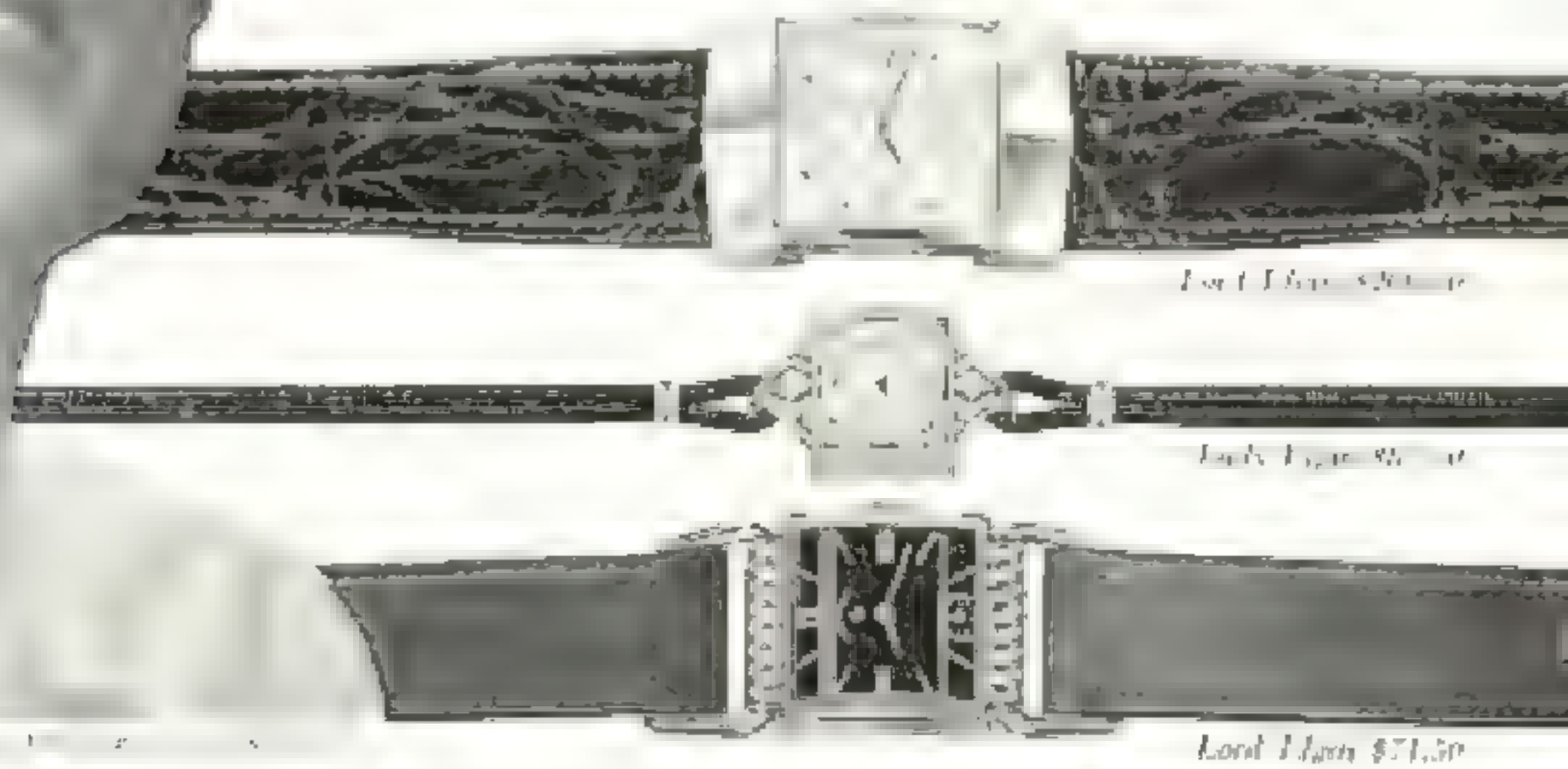

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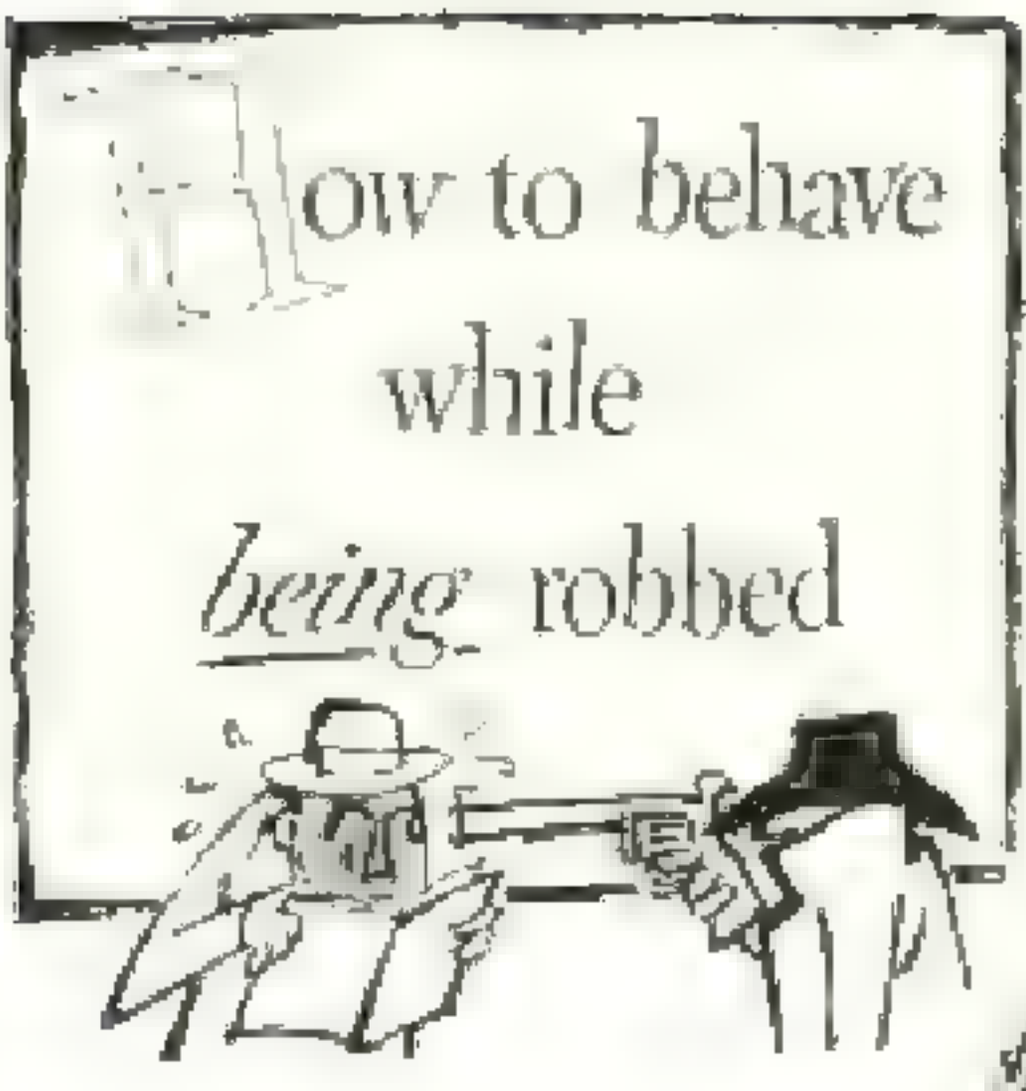
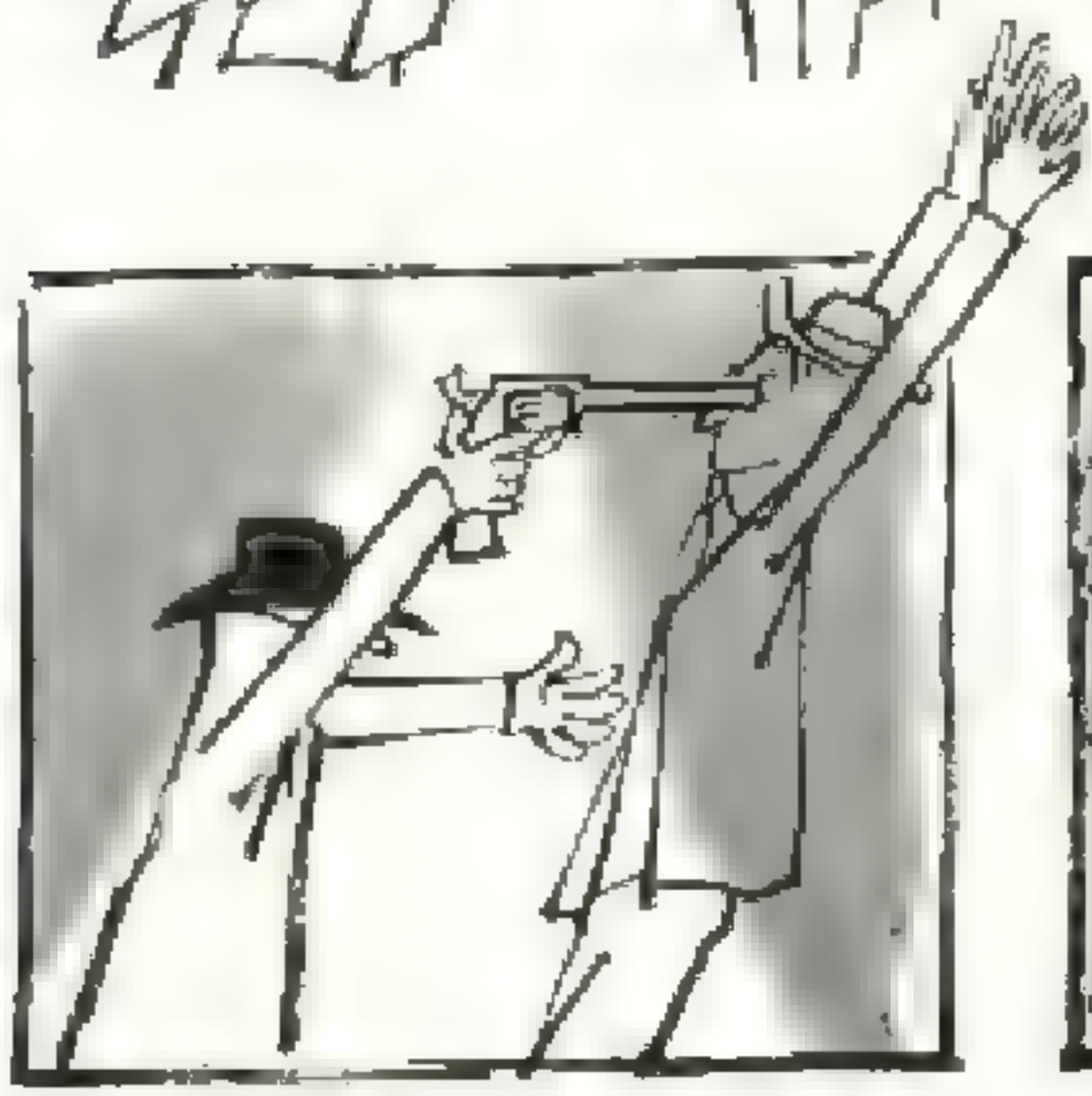


BURGLAR IN THE BEDROOM [illegible]



HOLDUP ON THE STREET [illegible] thing you can't afford to lose in great life. [illegible] never [illegible] is just too unpleasant. But a wise the holdup man. What is he wearing? Any unusual features? You may have a chance to identify him later [illegible]

PICKPOCKET IN A CROWD [illegible] the person [illegible] Pickpockets usually [illegible] your [illegible] pocket for an [illegible] During the confusion, he probably will [illegible]

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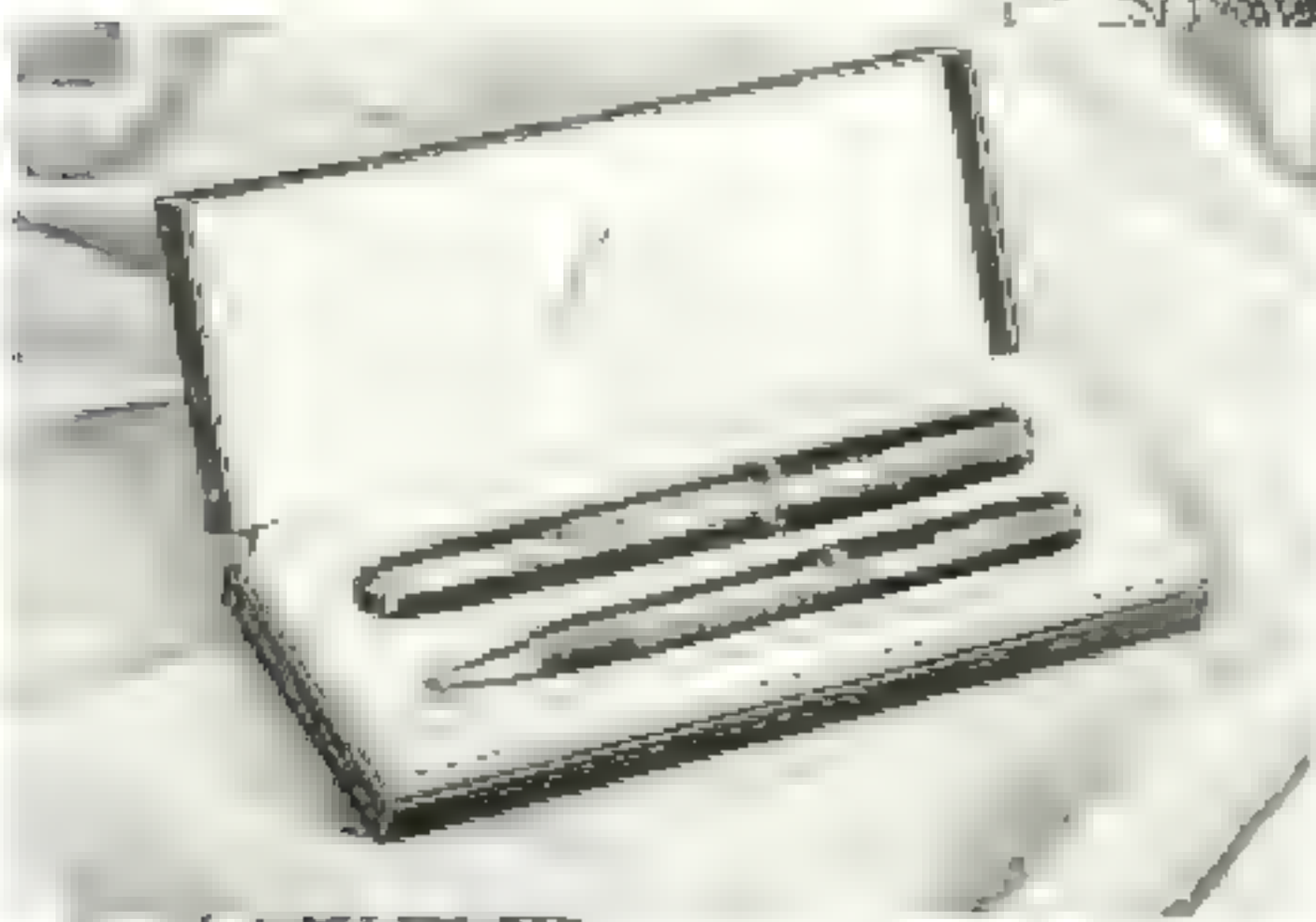

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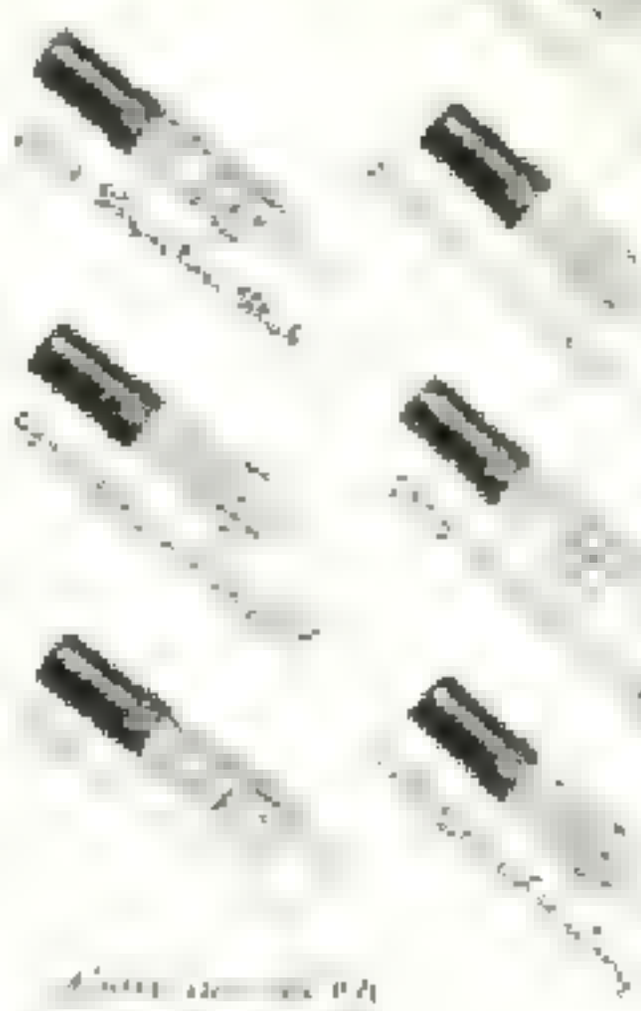

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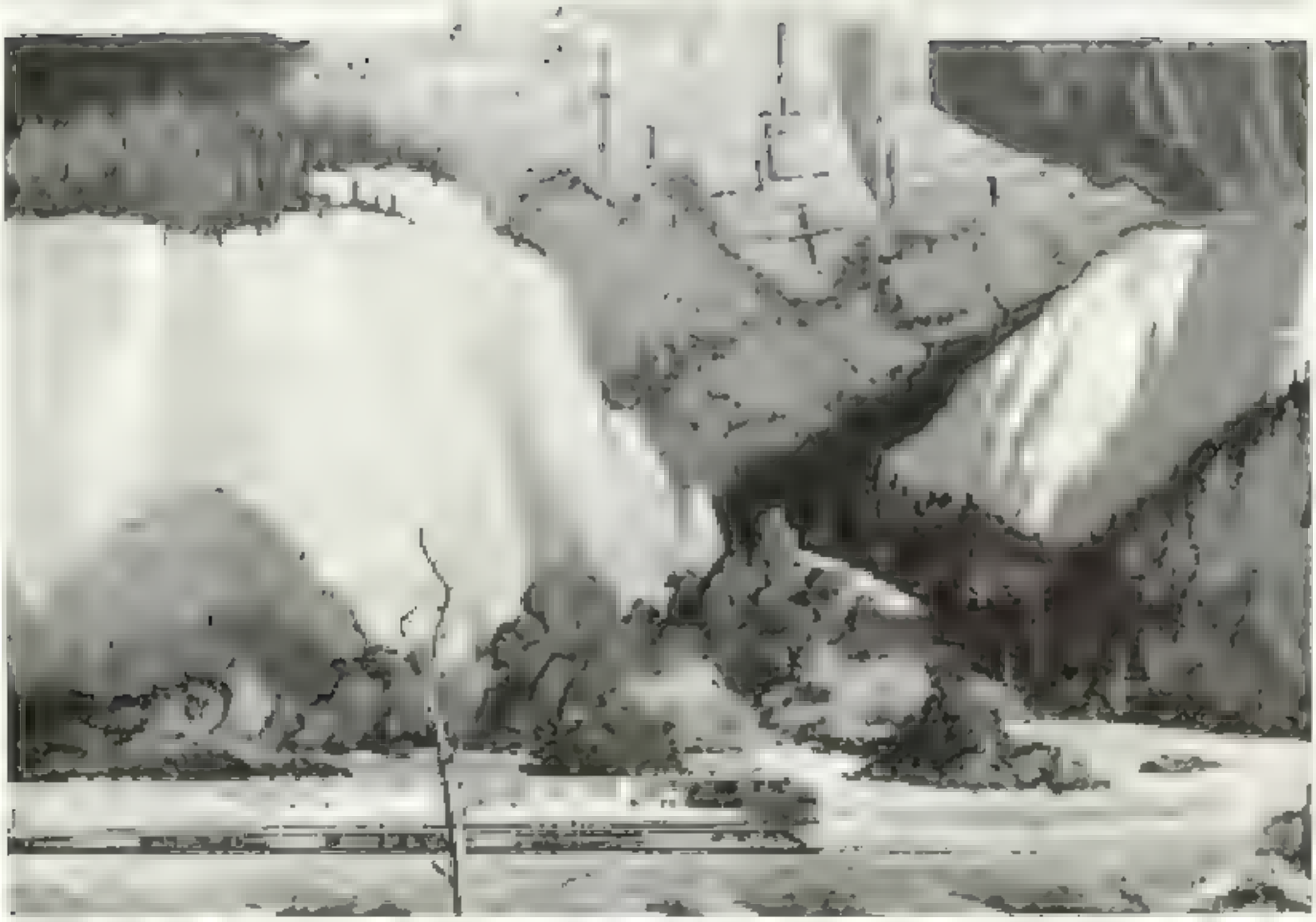

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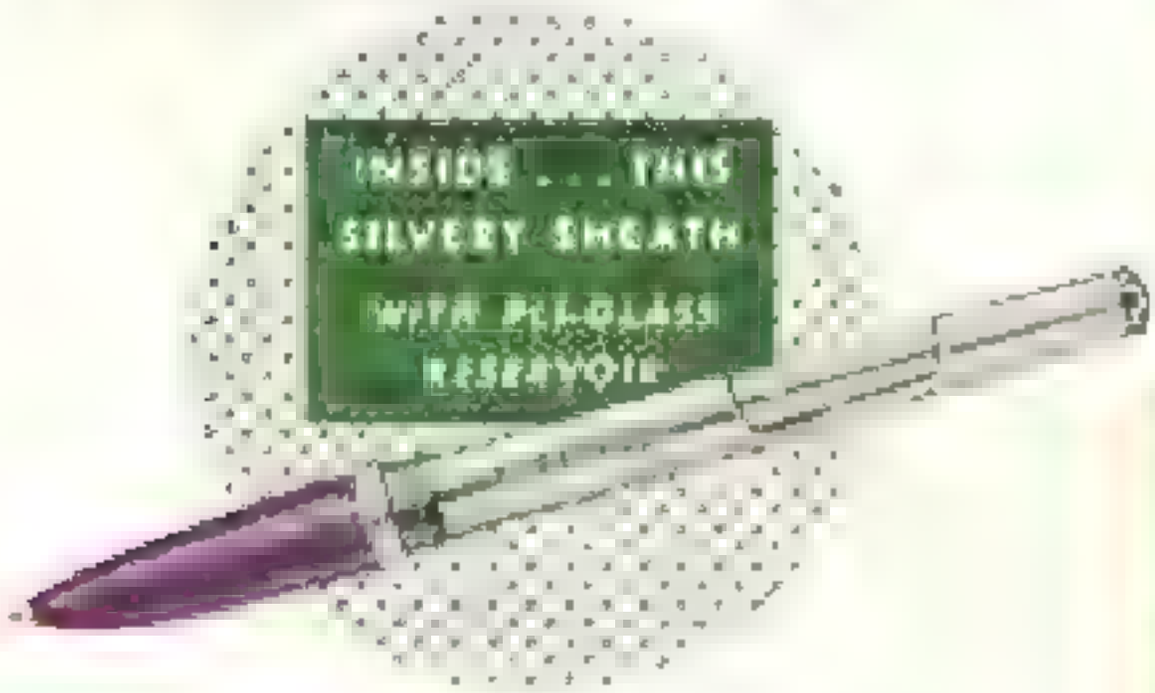

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THE SAME DELIGHTFUL WEATHER? [illegible]

[illegible]

[illegible] SOUTHERN CALIFORNIA [illegible]

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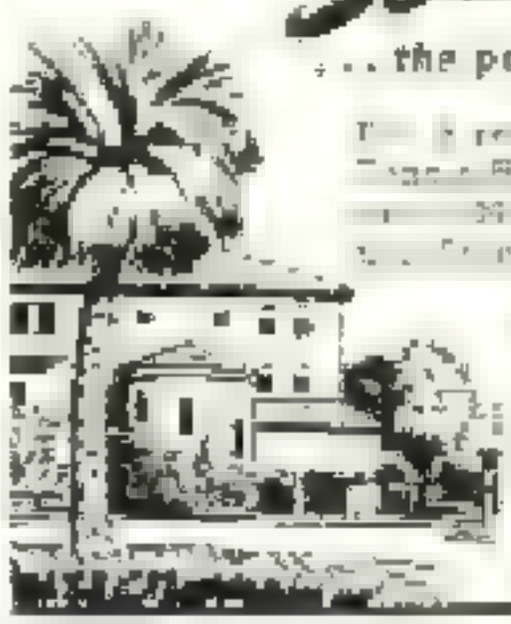

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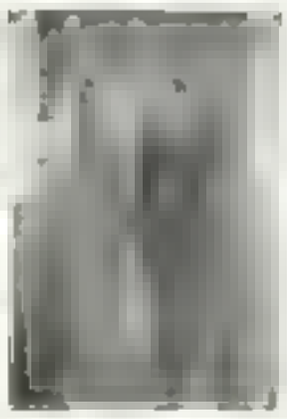

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ALL ABOARD . . . FOR THE BIGGEST BARGAIN IN AMERICA

These [illegible] people are all going downtown for a total fare of [illegible].

It would cost them eight times that much to go in their own automobiles.

Match that for value received . . . anywhere, any time.

There's management with a capital M. Be proud of it. And remember that if in your city the actual fares are a bit higher, your transit management has particularly tough problems to meet.

We know something about these problems because we've been serving these fine transit organizations for thirty, thirty years.

They know they can be sure of Westinghouse electrical equipment on street cars and trolley coaches. We like to think the efficiency and dependability of our motors and other apparatus has helped them to give you today's transportation bargain.

Making good on equipment of all kinds is our business. Making our products units . . . the best . . . is our creed. We express that creed in these words: You can be sure . . . it's Westinghouse.

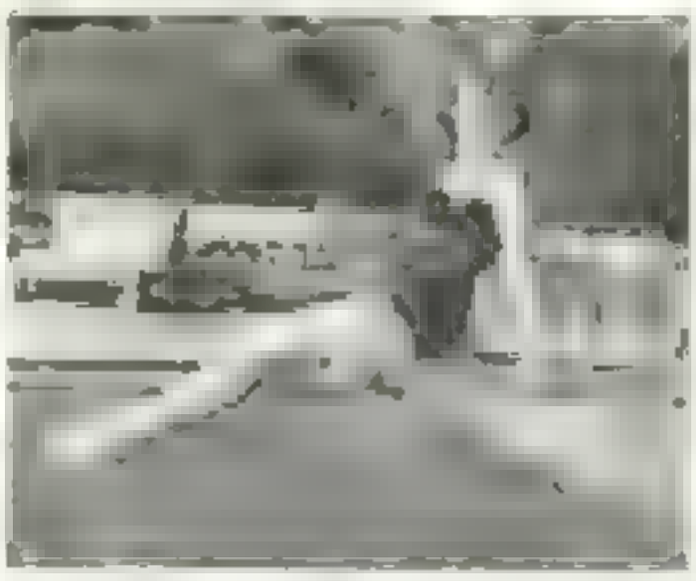
MORE SUN in Tucson than in any other resort city!

For sun + fun this winter come to warm, dry Tucson

ENJOY TRUE WESTERN HOSPITALITY. Tucson offers plentiful accommodations at sensible rates — dude resort hotels, friendly guest ranches, ultra-modern motels, apartments and cottages. Youngsters grow strong and brown attending one of Tucson's accredited public or ranch schools; University of Arizona. Plan to swim in outdoor pools. Ride horseback. Golf at fine country clubs. Drive down the new paved highway to Guaymas in colorful old Mexico for marvelous fishing, hunting. Come early — spend the winter in Tucson's glorious sunshine. Save your shopping until you get here.

WANT MORE FACTS?

Mail coupon to Tucson Chamber of Commerce, Stone & Pueblo, Tucson, Arizona, for free booklet.



THIS WINTER YOUR PLACE IN THE SUN IS

Tucson

IN FRIENDLY ARIZONA

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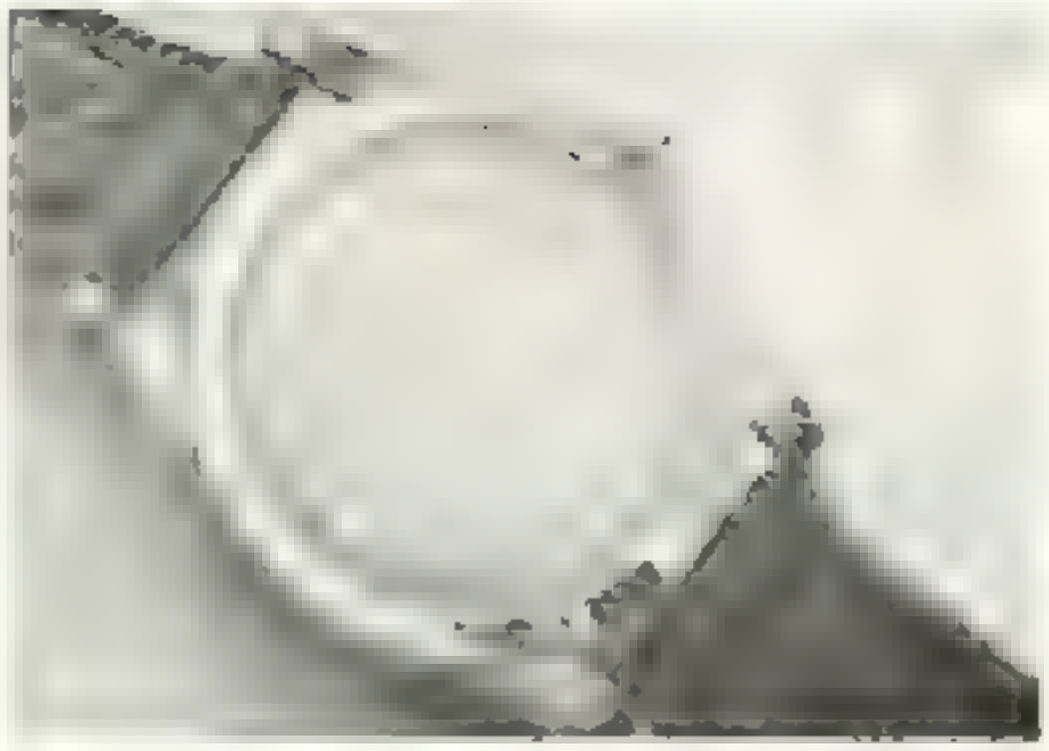

New OMEGA "Seamaster" the WATER-RESISTANT AUTOMATIC

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- Water- and [illegible]
- [illegible]

Swiss [illegible]

14K gold top [illegible] stainless steel back. [illegible] $145, fed. tax [illegible]

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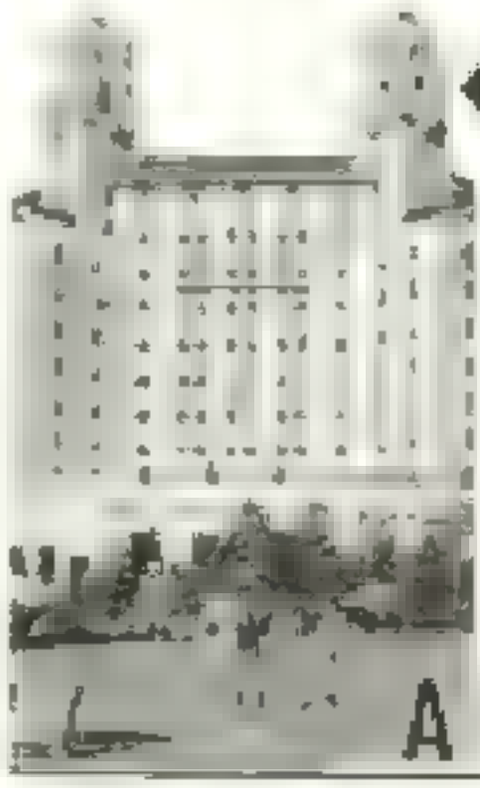
FIFTH AVENUE • NEW YORK

At leading jewelers throughout the world



HOT SPRINGS NATIONAL PARK ARKANSAS

[illegible]

ARLINGTON HOTEL AND BATHS

TEXAS Ruby Red-Blush GRAPEFRUIT

[illegible]

SANBORN'S, 1 S. Broadway, McAllen, Tex.

Mr. Gerber says: "Our [illegible] MEMMASTER for [illegible] operation. The voice repro[illegible] Best That's so Easy. The [illegible]

[illegible]

[illegible]

[illegible]

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Send for your free copy of "Does Your Dictating Date You?"

DICTAPHONE

[illegible]

CORPORATION

[illegible]

[illegible]

Your Name [illegible]

Company [illegible]

Street Address [illegible]

City & Zone [illegible] State [illegible]

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in 15 minutes I was out of business...

even with Fire Insurance!

"It was a fireproof building...I was insured... then it happened! A match in a waste basket ...a careless cigarette...who knows.

"It was over in a matter of minutes. But when I opened the safe—there were my accounts receivable, inventory records, contracts, the life-blood of my business, *in ashes!* And without those vital records I could not collect fully on my insurance because I could not establish *proof* of my loss!"

Statistics *prove* that out of every 100 firms that lose their records by fire, 43 *never reopen*.

If your present safe does not carry the label of the Underwriters' Laboratories, Inc., *it cannot be trusted* to give adequate protection. Many fireproof buildings have been completely gutted—*other papers reduced to ashes in seconds!*

Why take chances? Give your business the protection it needs with a Mosler "A" Label Record Safe certified by the Underwriters' Laboratories, Inc., against the hazards of fire, impact and explosion.

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☐ The Free Booklet: "What You Should Know ...

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"In my 'Rocket' Oldsmobile"

Oh, the go-ing's great in the "88",
It's a dri-ver's dream come true!

"ROCKET" HYDRA-MATIC

OLDSMOBILE

A General Motors Value

"Snug Harbor"

JUST AS SNUG HARBORS offer ships protection from stormy seas, there are protective coatings today that guard them against wind, snow, salt spray and other damaging forces.

Take as a plastic coating for ships' hulls that [illegible] problem of barnacles and rust. [illegible] two as long, between [illegible] intervals in dry-dock for cleaning and painting [illegible] side and bottom, there are [illegible] to keep [illegible] smooth shipshape.

[illegible] and tanks ashore get double protection [illegible] and soil. Some plastic coatings [illegible] and pipes, never touching the tank wall. The tank itself is safe from attack by [illegible] acids, alkalies, or other [illegible].

[illegible] coatings are made of the same kinds of plastics that serve so well in houses and in our homes. In a triumph of synthetic chemistry, these exceptional [illegible] materials are made for us from organic chemicals.

[illegible] plastics and chemicals [illegible] in natural coatings—are but a few of the hundreds of better [illegible] supplied by the people of Union Carbide [illegible] surpassing [illegible] industries.

FREE: [illegible]

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AND CARBON CORPORATION
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Trademarked Products of Bakelite and Union Carbide include —

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Miss Hospitality

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MISSISSIPPI

A refreshing variety of year-round vacation pleasures await you in Mississippi where the welcome is genuine. Fabulous state parks, picturesque lakes and rivers and the beautiful Gulf Coast offer sport or relaxation, fun and charm. Wherever you go — through the cotton groves of Delta, rolling pine-clad hills, Vicksburg, Natchez, Jackson, or other historic sites — you'll travel the South's finest highways.

"Lovely Miss Betty Denton, who was recently chosen Mississippi's Queen of Travel, invites you to spend your winter vacation in the 'Hospitality State.' Write for free, illustrated folder describing Mississippi's fun and recreation attractions.

Dept. [illegible]
5 ore Office Building
Jackson, Mississippi

Name _____

Address _____

City _____ State _____

Visit MISSISSIPPI...
"The Hospitality State"

You can holiday
without passport or visa in

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CANADA'S VACATION PROVINCE

Write for free book at:
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The gift that says

SEE BETTER

FOR YEARS TO COME

Give a bargain and you give years of satisfaction and joy! Magnifies whole column width at a glance or pages tops 2 lines. Gift boxed, for immediate delivery. **Postpaid, $6.50**

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on Union Pacific Dining Cars

During November, Union Pacific dining cars will feature roast turkey. Only the finest of deep-breasted birds are chosen from the turkey producing areas of the western states served by the railroad.

Your enjoyment of this delicious food will be enhanced by deft and courteous service on the Streamliners and other fine trains.

Through years of experience, Union Pacific chefs have acquired the art of roasting turkey to a queen's taste. It is a dish that delights.

FREE RECIPE: We'll gladly send you our special recipe for preparing and roasting turkey. Write Union Pacific Dining Car Dept., Room 397, Omaha 2, Nebraska.

UNION PACIFIC RAILROAD

Road of the Daily Streamliners

Some simple facts about

DIABETES

Diabetes is a condition in which the body is unable to utilize properly the sugars and starches in food. This condition is due to a deficiency in the body's supply of insulin. However, the use of insulin, made from the pancreas of animals, has made the treatment of diabetes increasingly effective. As a result, diabetics usually live long and nearly normal lives. In fact, the [illegible] for the average diabetic today is similar to what it was before insulin was discovered, and has increased even more for young diabetics.

1 RESEARCH *promises more effective treatments for diabetes*

Medical science is constantly improving the treatment of diabetes. Different types of insulin, which vary in speed and duration of action, have been developed [illegible] to provide patients [illegible] fast action with long lasting effect.

There is continuing research on other phases of the disease. Work with radioactive isotopes and other studies offer the hope for further progress in treatment, and perhaps for the prevention of some cases of the disease.

2 DETECTION *is [illegible] accomplished*

Having periodic medical examinations that include a check for diabetes helps to insure early detection. If proper treatment is started at once, serious complications can usually be avoided.

It is now possible for anyone who suspects diabetes to make a simple, inexpensive test at home to "signal" in the urine—once the sensitive [illegible] for the test may be obtained at most drug stores. If the results of the test are positive, a doctor should be consulted for a complete examination.

3 TREATMENT *is largely the patient's responsibility*

Cooperation between patient and doctor is essential. Only the physician can determine whether or not insulin is required, and in what dosage. He will also prescribe proper diet and advise about necessary exercise.

Once the proper treatment is established, the patient should be careful and faithful in following the prescribed [illegible]. If the average diabetic observes these and other precautions, he can usually look forward to living [illegible].

The frog that's born in a beeswax bowl

[illegible]

[illegible]

[illegible]

Just load your miniature camera with Kodachrome Film—and you get this

Double Reward

1. brilliant screen projection of your pictures . . .

Finished and mounted on color slides without extra charge

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In the reasonably priced 2X size shown, or in larger sizes

Color—as captured by a miniature camera loaded with Kodachrome Film—gives pictures taking new life and excitement. It's easy: use any "miniature" with *f*/6.3 lens or better. You "can't wait" to see and share your pictures!

Fine equipment for less money . . .

And now Kodak has produced [illegible] miniature camera with [illegible] lens [illegible] at a remarkably low price of $[illegible], including Federal Tax. Ask your dealer to show you the sensational new Kodak Duaflex [illegible]. With it—and Kodak [illegible] Model [illegible] $21.50—you're well equipped to start your Kodachrome career . . . Also see the Kodak [illegible] Viewer—projector, screen, and slide changer combined . . . Other Kodak cameras and projectors too—all fine instruments.

Eastman Kodak Company, Rochester 4, N. Y.

It's Kodak for Color

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National Geographic Society
Dept. [illegible], Washington 6, D. C. 1950

Please send me items indicated below:

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E. & W. Hemispheres			x
Europe & Mediterranean*	x		
Europe and Near East*			
Central Europe & Mediterranean*			
Germany & Approaches*			
India & Burma*			
Indian Ocean			x
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Enclose remittance of $ payable to the Society

WRITE NAME AND ADDRESS IN MARGIN BELOW

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Men get to know Each Other

start this Christmas
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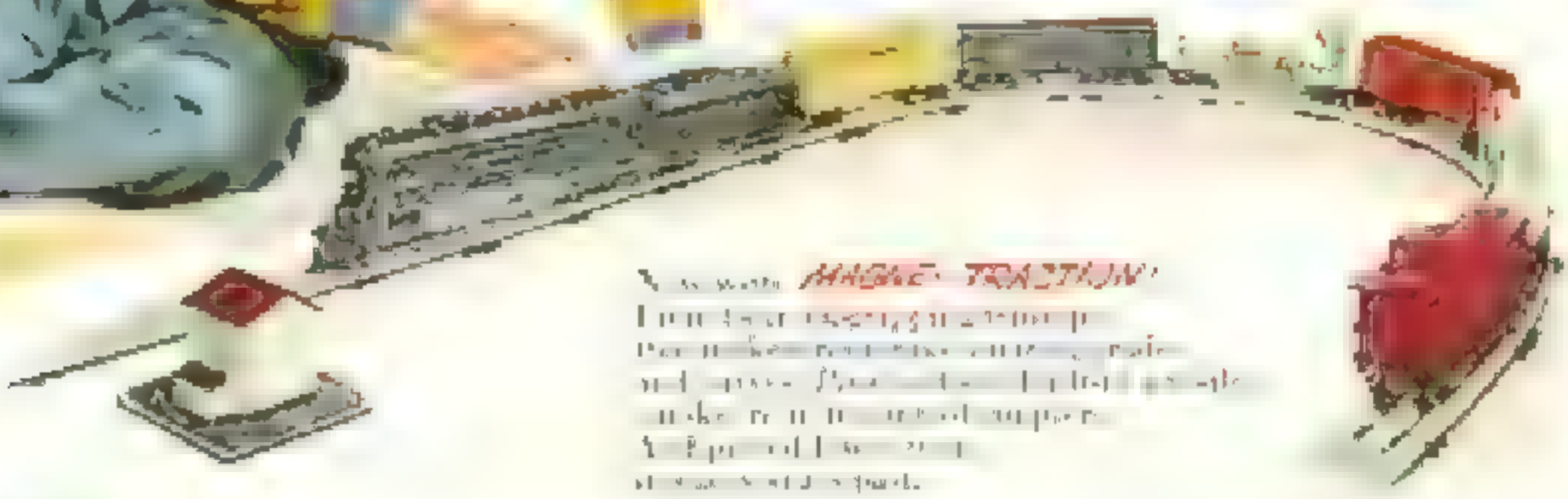

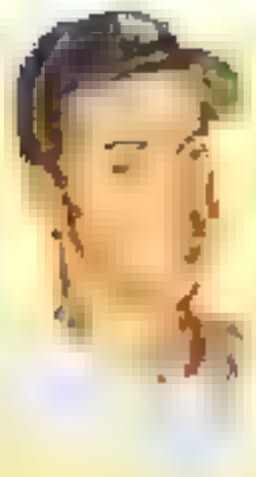

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Name

Address

City Zone State

Is "cutting down on coffee" a problem to your patients?

When you have patients affected by the caffein in coffee, you may suggest they limit their coffee-drinking to two, or maybe three cups a day.

While this is a less drastic step than to stop them from drinking coffee altogether, it still leaves the patient with the temptation to go over the limited amount.

Sanka Coffee, however, is the *perfect* answer for any patient affected by caffein in any amount.

With Sanka there's no need to cut down on coffee at all. For Sanka is a real coffee that is 97% caffein-free. Patients can drink all the Sanka they want, and without the slightest qualm about caffein effect.

We suggest that you try drinking Sanka yourself. We know you will appreciate what a fine coffee it is.

And — if you are affected by caffein — it may very well be the answer to your own problem, as well as that of your patients!

Sanka Coffee

Real coffee with the worry taken out. Drink it and sleep!

Products of General Foods

PLEASE FILL IN BLANK BELOW, DETACH, AND MAIL TO THE SECRETARY

Recommendation for Membership

FOR THE YEAR 1951 IN THE

NATIONAL GEOGRAPHIC SOCIETY

** The Membership Dues, Which Are for the Calendar Year, Include Subscription to the National Geographic Magazine*

To the Secretary, National Geographic Society,
Sixteenth and M Streets Northwest, Washington 6, D. C.: _____ *1950*

I nominate _____
PRINT NAME OF NOMINEE

Occupation _____
(This information is important for the records)

Address _____
PRINT ADDRESS OF NOMINEE

_____ *for membership in The Society.*

Name of nominating member _____
PLEASE PRINT

Address _____

* DUES: Annual membership in United States $4.00; Canada, $5.00; abroad, $5.00. Life Membership, $100.00 U. S. funds. Remittances should be payable to National Geographic Society. Remittances from outside of continental United States and Canada should be made by New York draft or international money order.

11-50

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Contour
ELECTRIC SHAVER

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He seemed like a big fellow in the rush days of 1941. But it's a good thing he's bigger today. For the telephone system of nine years ago couldn't possibly do today's job.

Since 1941, the Bell System has increased the number of telephones by more than 16,000,000. There are nearly twice as many now as nine years ago.

Millions of miles of Long Distance circuits have been added. Billions of dollars have been spent for new equipment of all kinds. The number of Bell Telephone employees has increased to more than 600,000.

Times like these emphasize the benefits of such growth and the value of a strong, healthy telephone company to serve the Nation's needs.

For now, more than ever, the Nation depends on telephone service to get things done and speed the job of defense.

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You dine superbly, graciously.

You live in new beauty and comfort.

You sleep in air-conditioned staterooms.

Then Hawaii—feasts, dances, sparkling surf and tropical gardens...a golden, happy vacationland where summer never ends!

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Have you ever known a South Seas night?

It's like a night in another world...a warm, enchanted world filled with music and moonlight. And when you stroll the deck, watching tropical waves splash gently past the bow, you hear the trade winds whisper their promise of adventure...of shipboard fun, dancing, swimming, sunbathing, deck games—and a glorious time in the Islands. For unforgettable days and nights...

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There is no cruise in the world like

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